PIONEER
*The Art of Entertainment*

# Service Manual

ORDER NO.
ARP2793

## PROJECTION MONITOR RECEIVER

# SD-T5022

SL

- **Refer to the service manual ARP2368 for SD–T5000/S.**
- This manual is applicable to SD–T5022/SL.

**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
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IFI JUNE 1993 Printed in Japan

# CONTRAST OF MISCELLANEOUS PARTS

*NOTES:*
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *Parts marked by ☆ are important parts which relate to X-rays radiation. If any of these parts need to be replaced, always replace with specified parts.*

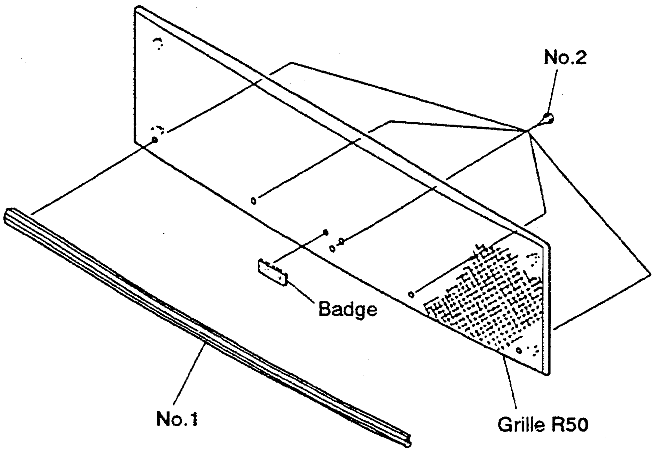
SD-T5022/SL and SD-T5000/S have the same construction except for the following :

| Mark | Symbol & Description | Part No. | | Remarks |
|---|---|---|---|---|
| | | SD-T5000/S | SD-T5022/SL | |
| | Control sheet | AAK2236 | AAK2507 | |
| | Door | AAN1297 | AAN1391 | |
| | Grille ornament | • • • • • | AAP1158 | No.1 |
| | Tube | AHD2188 | AHD2632 | |
| | Lens assembly 50(G) | AMR2164 | AMR2311 | |
| NSP | Rear panel | ANC1799 | ANC2111 | |
| ⚠ | Deflection yoke (L1) | ATL1072 | ATL1094 | |
| ⚠ | Deflection yoke (L2) | ATL1073 | ATL1095 | |
| ⚠ | Deflection yoke (L3) | ATL1074 | ATL1096 | |
| ☆ ⚠ | CRT service assembly (R) | AWY1133 | AWY1234 | |
| ☆ ⚠ | CRT service assembly (G) | AWY1130 | AWY1233 | |
| ☆ ⚠ | CRT service assembly (B) | AWY1134 | AWY1235 | |
| | Screw | • • • • • | BYC35P080FZK | No.2 |
| | Operating instructions (English) | ARB1341 | ARB1454 | |

Note : The numbers in the remarks column correspond to the numbers on the exploded diagram. Refer to " EXPLODED VIEW".

## • EXPLODED VIEW (FRONT VIEW)

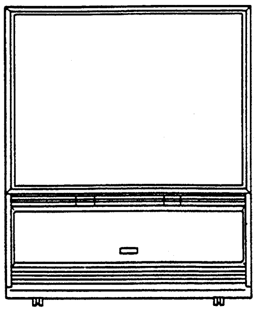
Note:
The numbers on the exploded diagram correspond to the numbers in the remarks column of the comparative table. Refer to "CONTRAST OF MISCELLANEOUS PARTS".



**PIONEER**

*The Art of Entertainment*

# Service Manual



ORDER NO.
ARP2368

## PROJECTION MONITOR RECEIVER

# SD-T5000

**SD – T5000 HAS THE FOLLOWING:**

| Type | Power requirement | Remarks |
|---|---|---|
| S | AC 110V , 120V – 127V, 220V, 240V (switchable) | |
| WEB | AC220V – 240V | |
| WEZI | AC220V – 240V | |

- **This manual is applicable to S type.**
- **This manual is combined with operating instructions (from page 227).**
- **As to the other types, refer to the applicable service manuals.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trate del método ajuste escrito en español.**

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**This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.**
**Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.**

**WARNING**
**Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).**
**When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.**

# 1. SAFETY PRECAUTIONS

NOTICE:Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis or picture tube.
The following precautions should be observed:

1. Do not install, remove, or handle the picture tube in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while picture tubes are handled.
   Keep picture tube away from the body while handling.
2. When service is required, even though the SD-T5000 an isolation transformer should be inserted between power line and the set in safety before any service is performed.
3. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
4. When service is required, observe the original lead dress.
   Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
5. Always use the manufacturer's replacement components.
   Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's.
   Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
6. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacturer has become defective, or inadvertently defeated during servicing.

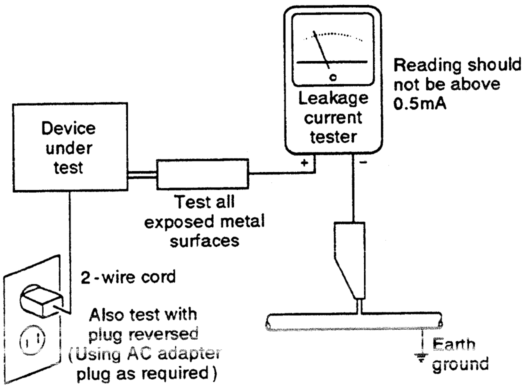
Therefore, the following checks should be performed for the continued protection of the customer and service technician.

### Leakage Current Cold Check

With the AC plug removed from the 110/120 - 127/ 220/ 240V AC 50/60Hz source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester(DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part(input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.3MΩ and a maximum resistor reading of 5MΩ . Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

### Leakage Current Hot Check

Plug the AC line cord directly into a 110/120 - 127/220/240V AC 50/60Hz outlet ( do not use an isolation transformer for this check ). Turn the AC power switch on. Using a "Leakage Current Tester(Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet(input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground(water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
Device under test
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

### High Voltage

This set is provided with a X-ray protection for clearly indicating that voltage has increased in excess of a predetermined value. Comply with all notes described in this Service Manual regarding this hold down circuit when servicing, so that this X-ray protection may correctly be operated.

### Serviceman Warning

In the status of the black picture(video muting is being applied)when no signal is input, high voltage of this set during operation is less than 31.4kV. In case any component having some relation to the high voltage is replaced, confirm that the high voltage is lower than 31.4kV in the status of the black picture when no signal is input.

### X-radiation

TUBE:The primary source of X-radiation in this set is the picture tube.

For continued X-radiation protection, the replacement tube must be the same type as the original, PIONEER approved type.

The picture tube(CRT assembly R, G, B)used in this set holds complete guarantee against X-ray radiation when the X-ray is sealed (See on page 5). Accordingly, when the current in flowing to the picture tube(CRT assembly R, G, B), be sure to perform it by putting the tube into X-ray sealed applied state. Avoid absolutely to flow the current to the picture tube(CRT assembly R, G, B)itself. Moreover, when the voltage of the high voltage circuit becomes abnormally a little higher, the picture tube radiates X-rays. Accordingly, when servicing the high voltage circuit be sure to replace as an assembly with the POWER SUPPLY-DEFLECTION assembly(AWV1225) in the manner in which has been adjusted to perform normal operation.

## 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, X-radiation, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

# 3. CHARGED SECTION, HIGH VOLTAGE GENERATING POINT AND X-RAY PROTECTION

## ■ Charged section

The circuit in which the commercial AC power is used as it is without passing through the power supply transformer. If the charged section is touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. In this case, be sure to connect the set via an insulated transformer and supply the current.

## ■ Charged section (Power supply primary side)

1. The primary side of the POWER SUPPLY - DEFLECTION assembly
2. AC power cords
3. AC inlet
4. AC INPUT assembly
5. Voltage selector
6. Power transformer

part is the charged section.

part is the high voltage generating points other than the charged section.

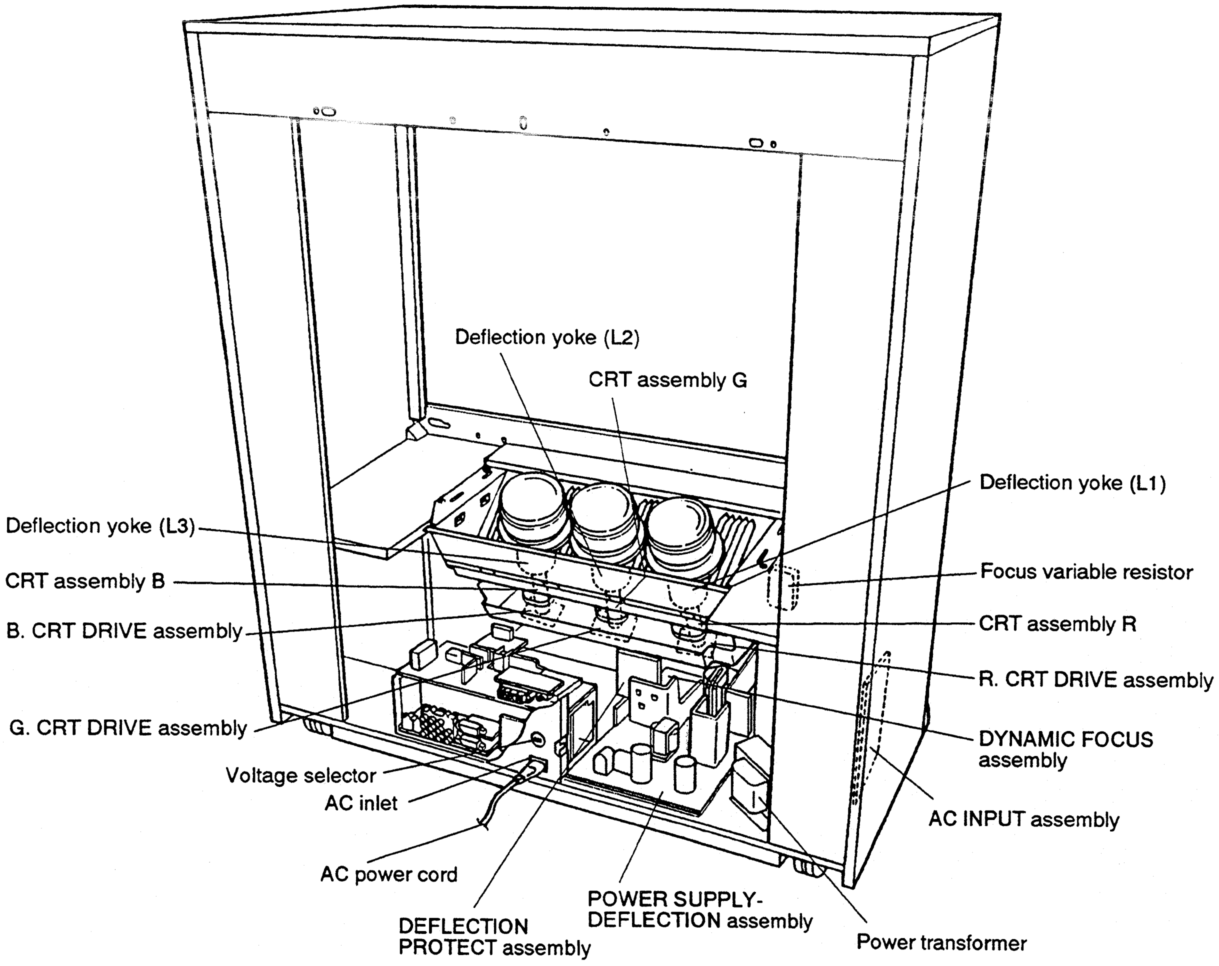

Deflection yoke (L2)
CRT assembly G
Deflection yoke (L1)
Deflection yoke (L3)
CRT assembly B
B. CRT DRIVE assembly
G. CRT DRIVE assembly
Focus variable resistor
CRT assembly R
R. CRT DRIVE assembly
DYNAMIC FOCUS assembly
Voltage selector
AC inlet
AC INPUT assembly
AC power cord
POWER SUPPLY-DEFLECTION assembly
DEFLECTION PROTECT assembly
Power transformer

Fig. 3-1 Charged section and high voltage generating point

## ■ High voltage generating point

The place where voltage of over 100V is generated.

1. Charged section
2. POWER SUPPLY - DEFLECTION assembly (including FBT) (31.0kV, 135V)
3. R. CRT DRIVE assembly (10.5kV)
4. G. CRT DRIVE assembly (10.5kV)
5. B. CRT DRIVE assembly (10.5kV)
6. CRT assembly R (31.0kV)
7. CRT assembly G (31.0kV)
8. CRT assembly B (31.0kV)
9. Focus variable resistor and DYNAMIC FOCUS assembly (10.5kV)
10. Deflection yokes (L1, L2, and L3) (Approx. 1100V at peak)
11. DEFLECTION PROTECT assembly (135V)

## ■ X-ray protection

- Regarding the parts which are relative to radiation of X-rays (There is the danger to radiate X-ray from the individual CRT assembly R, G, B), there are notifications of caution in the individual schematic diagrams. Be sure to read them for safety's sake.
- The component parts for X-ray protection are as follows :When the current flows to the CRT assembly R, G, B, be sure to perform it with these parts being attached. Protection from the X-ray radiation is maintained in the state in which these parts have been installed to the CRT assembly R, G, B. Accordingly, never supply current only to the CRT assembly R, G, B.
  Moreover, the anode voltage of the CRT assembly R, G, B should always be kept not higher than the predetermined value (in the minimum brightness and picture state when non signal input is higher than 31.4kV). Be sure to drive the CRT assembly R, G, B by using a completely functional POWER SUPPLY - DEFLECTION assembly which has been adjusted completely in the combined state. (When the voltage abnormally becomes high, the X-ray protection circuit will operate.)

1. CRT assembly R, G, B(Do not dismantle CRT assemblies under any circumstances).
2. Lens assembly 50 (R), (G), (B)

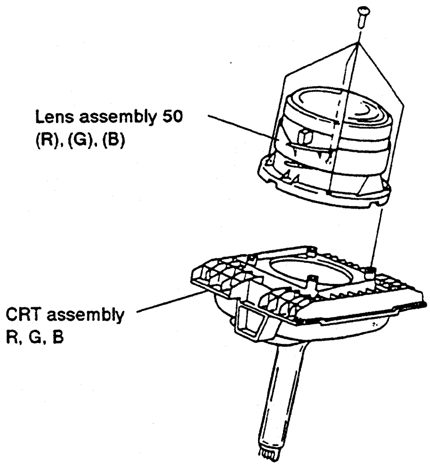


Fig. 3-2 Component parts for X-ray protection

# 4. EXPLODED VIEWS, PACKING AND PARTS LIST

*NOTES:*

- *The Part with an encircled number are generally unavailable because they are not in Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *Parts marked by ☆ are important parts which relate with X-ray radiation. If any of these parts need to be replaced, always replace with specified parts.*

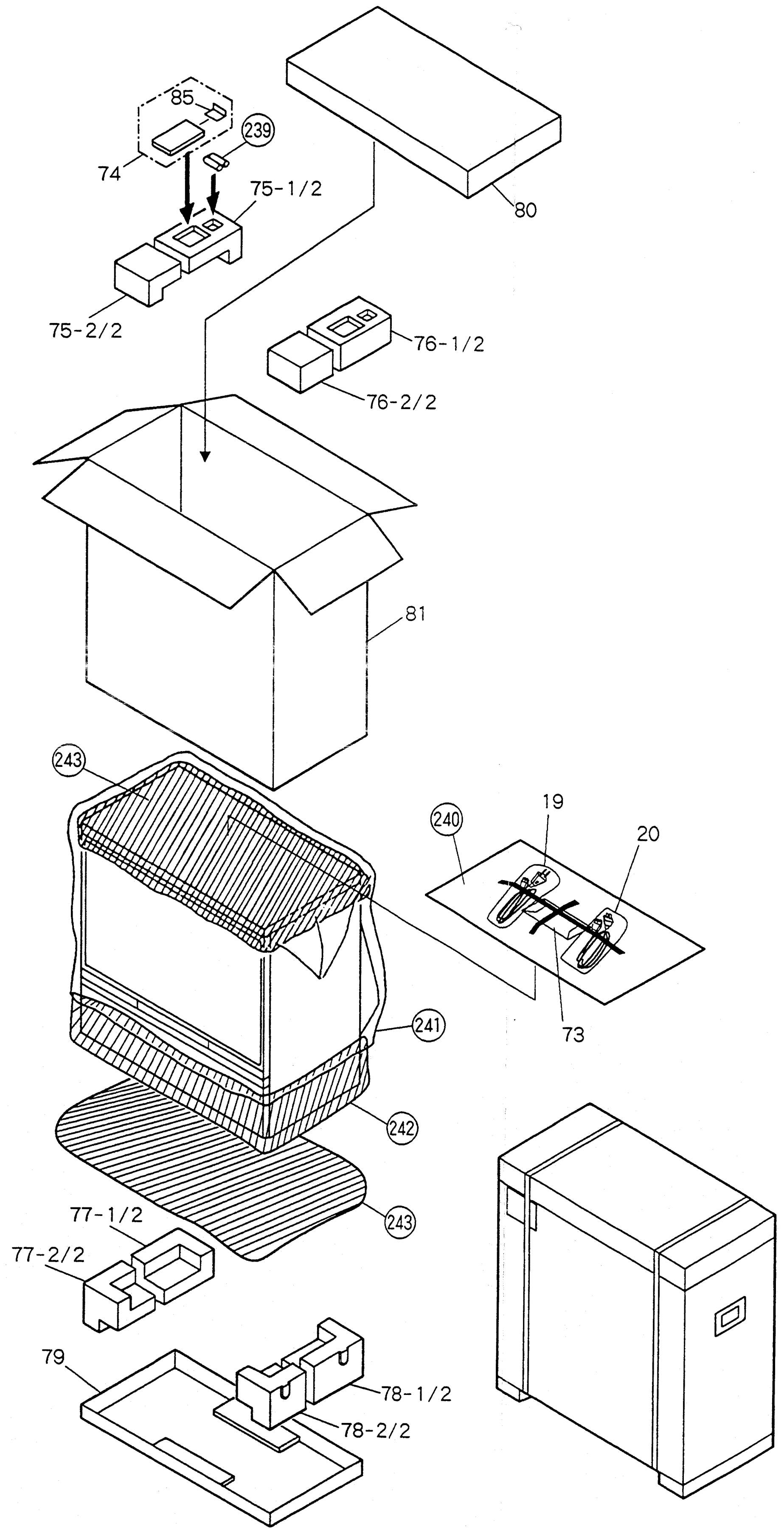
## 4.1 PARTS LIST

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | 1 | VR1 FOCUS VR | ACX1061 |
| ⚠ | 2 | L1 DEFLECTION YOKE | ATL1072 |
| ⚠ | 3 | L2 DEFLECTION YOKE | ATL1073 |
| ⚠ | 4 | L3 DEFLECTION YOKE | ATL1074 |
| ⚠ | 5 | T1 POWER TRANSFORMER | ATS1391 |
| ⚠ | 6 | S1 VOLTAGE SELECTOR | AKX1007 |
| ⚠ | 7 | AC INLET | AKP1021 |
| ⚠ | 8 | FU502 FUSE(T160mA/250V) | AEK-501 |
| ⚠ | 9 | FU501 FUSE(T400mA/250V) | AEK-504 |
| ⚠ | 10 | FU653 FUSE(T4A/250V) | AEK-514 |
| ⚠ | 11 | FU654 FUSE(T4A/250V) | AEK-514 |
| ⚠ | 12 | FU655 FUSE(T4A/250V) | AEK-514 |
| ⚠ | 13 | FU656 FUSE(T4A/250V) | AEK-514 |
| ⚠ | 14 | FU657 FUSE(T4A/250V) | AEK-514 |
| ⚠ | 15 | FU651 FUSE(T6.3A/250V) | AEK-516 |
| ⚠ | 16 | FU652 FUSE(T6.3A/250V) | AEK-516 |
|  | 17 | SPEAKER | APV1013 |
|  | 18 | SPEAKER 66 | D66AP45-56L |
| ⚠ | 19 | AC POWER CORD | ADG1107 |
| ⚠ | 20 | AC POWER CORD | ADG1109 |
|  | 21 | SHIELD COVER | ANH1166 |
|  | 22 | MIRROR PROTECTOR B | AAP1122 |
|  | 23 | PLASTIC RIVET | AEC-441 |
|  | 24 | SCREW GROMMET | AEC1011 |
|  | 25 | RUBBER CUSHION | AEC1125 |
|  | 26 | CORD HOLDER | AEC1257 |
| ☆ | 27 | LENS ASSEMBLY50 (R) | AMR2163 |
| ☆ | 28 | LENS ASSEMBLY50 (G) | AMR2164 |
| ☆ | 29 | LENS ASSEMBLY50 (B) | AMR2165 |
|  | 30 | MIRROR | AMR2176 |
|  | 31 | FRESNEL LENS(50) | AMR2307 |
|  | 32 | LENTICULAR SHEET(50) | AMR2308 |
|  | 33 | SCREW | ABA-115 |
|  | 34 | SCREW WITH WASHER | ABA1005 |
|  | 35 | SCREW(STEEL) | ABA1067 |
|  | 36 | TAPPING SCREW(STEEL) | ABA1069 |
|  | 37 | SCREW (STEEL) | ABA1089 |
|  | 38 | SCREW | ABA1099 |
|  | 39 | SCREW(STEEL) | ABA1118 |
|  | 40 | SPECIAL SCREW | ABA1121 |
|  | 41 | M5 SCREW | ABA1122 |
|  | 42 | • • • • • • |  |
|  | 43 | • • • • • • |  |
|  | 44 | HEXAGONAL DUCT NUT | ABN-087 |
|  | 45 | SCREW | AMZ40P080FZK |
|  | 46 | SCREW | AMZ40P200FZK |
|  | 47 | • • • • • • |  |
|  | 48 | SCREW | BBZ30P060FMC |
|  | 49 | SCREW | BBZ30P080FZK |
|  | 50 | SCREW | BPZ30P120FZK |
|  | 51 | SCREW | BYC35P120FZB |
|  | 52 | SCREW | BYC35P160FZK |
|  | 53 | SCREW | BYC40P160FMC |
|  | 54 | SCREW | BYC40P200FMC |
|  | 55 | SCREW | BYC40P250FMC |
|  | 56 | SCREW | FBT40P120FZK |
|  | 57 | SCREW | MTZ30P100FZK |
|  | 58 | SCREW | PPZ40P120FMC |
|  | 59 | SCREW | VBT30P080FZK |
|  | 60 | SCREW | VCZ30P060FMC |
|  | 61 | SCREW | VMZ30P060FCU |
|  | 62 | SCREW | VPZ40P160FMC |
|  | 63 | CONTROL SHEET | AAK2236 |
|  | 64 | INDICATOR PANEL | AAK2237 |
|  | 65 | BADGE | AAM1036 |
|  | 66 | DOOR | AAN1297 |
|  | 67 | SCREEN FRAME ASS'Y | AAP1186 |
|  | 68 | CONTROL PANEL | AMB1793 |
|  | 69 | SIDE PANEL L(50) | AMB1796 |
|  | 70 | SIDE PANEL R(50) | AMB1797 |
|  | 71 | GRILLE R50 | AMR2281 |
|  | 72 | CATCHER | AEC1012 |
|  | 73 | OPERATING INSTRUCTIONS (English) | ARB1341 |
|  | 74 | REMOTE CONTROL UNIT | AXD1245 |
|  | 75 | UPPER PAD L | AHA1353 |
|  | 76 | UPPER PAD R | AHA1354 |
|  | 77 | UNDER PAD L | AHA1355 |
|  | 78 | UNDER PAD R | AHA1356 |
|  | 79 | UNDER CARTON | AHD1892 |
|  | 80 | UPPER CARTON | AHD2187 |
|  | 81 | TUBE | AHD2188 |
| ⚠☆ | 82 | CRT ASSEMBLY(G) | AWY1130 |
| ⚠☆ | 83 | CRT ASSEMBLY(R) | AWY1133 |
| ⚠☆ | 84 | CRT ASSEMBLY(B) | AWY1134 |
|  | 85 | BATTERY COVER | AZN1970 |
|  | 86 | R.CRT DRIVE ASSEMBLY | AWZ3040 |
|  | 87 | G.CRT DRIVE ASSEMBLY | AWZ3041 |
|  | 88 | B.CRT DRIVE ASSEMBLY | AWZ3042 |
| ☆ | 89 | POWER SUPPLY-DEFLECTION ASSEMBLY | AWV1225 |

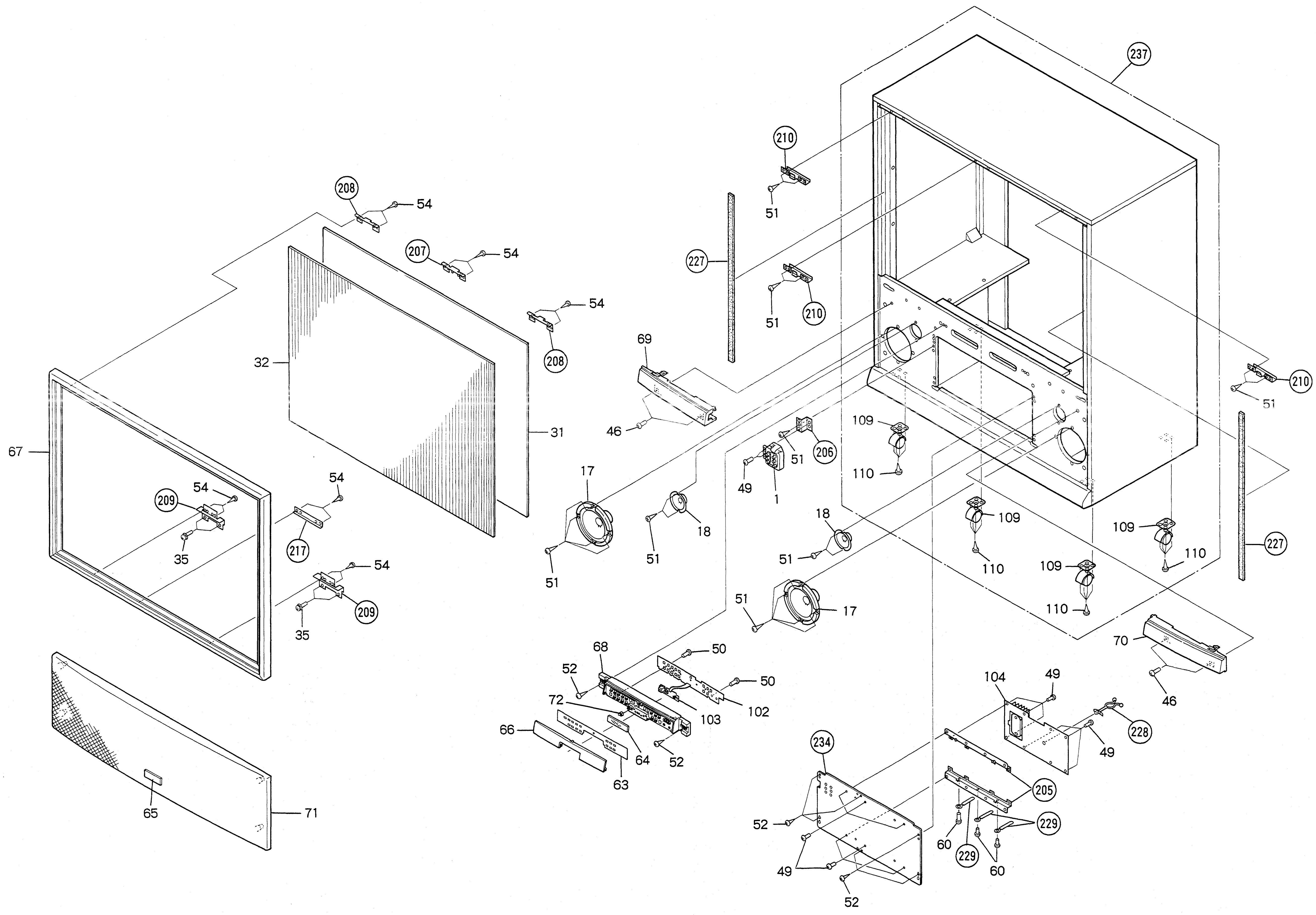
| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 90 | AC INPUT ASSEMBLY | AWZ3991 |
| | 91 | DYNAMIC FOCUS ASSEMBLY | AWZ3992 |
| | 92 | AM-DEMOD ASSEMBLY | AWZ3993 |
| | 93 | 4.5MHz B.P.F. ASSEMBLY | AWZ3994 |
| | 94 | VIDEO-AUDIO ASSEMBLY | AWV1227 |
| | 95 | MICROCOMPUTER ASSEMBLY | AWZ3995 |
| | 96 | TUNER-NICAM ASSEMBLY | AWZ3996 |
| | 97 | I/O-TEXT ASSEMBLY | AWZ3997 |
| | 98 | SUB TEXT ASSEMBLY | AWZ3998 |
| | 99 | Y-C SEPARATION ASSEMBLY | AWZ3999 |
| | 100 | EXT. SP ASSEMBLY | AWZ4000 |
| | 101 | SOUND TRAP ASSEMBLY | AWZ4001 |
| | 102 | FRONT ASSEMBLY | AWZ4002 |
| | 103 | DPO ASSEMBLY | AWZ4003 |
| | 104 | CONVERGENCE ASSEMBLY | AWZ4004 |
| ☆ | 105 | HIGH VOLTAGE CONTROL ASSEMBLY | AWZ4005 |
| | 106 | AV1 ASSEMBLY | AWZ4006 |
| | 107 | AV2 ASSEMBLY | AWZ4007 |
| | 108 | DEFLECTION PROTECT ASSEMBLY | AWV1232 |
| | 109 | CASTER | AMR1117 |
| | 110 | SCREW(FOR CASTER) | BYC40P180FMC |
| | 111 | SCREW | BYC35P100FMC |
| | 112 | MICROCOMPUTER-SUB ASSEMBLY | AWV1245 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 200 | CHASSIS | ANA1120 |
| | 201 | CRT STAND (50) | ANA1156 |
| | 202 | REAR PANEL | ANC1799 |
| | 203 | COVER L | ANF1053 |
| | 204 | REAR COVER | ANF1066 |
| | 205 | CONVERGENCE STAY | AND1035 |
| | 206 | VR HOLDER | ANG1404 |
| | 207 | FRAME UPPER HOLDER A | ANG1443 |
| | 208 | FRAME UPPER HOLDER B | ANG1444 |
| | 209 | FRAME UNDER HOLDER | ANG1445 |
| | 210 | UPPER METAL FRAME | ANG1634 |
| | 211 | SIDE FRAME | ANG1448 |
| | 212 | FRAME | ANG1449 |
| | 213 | PCB HOLDER A | ANG1450 |
| | 214 | PCB HOLDER B | ANG1451 |
| | 215 | MIRROR HOLDER ASS'Y | ANG1458 |
| | 216 | FOCUS HOLDER | ANG1496 |
| | 217 | FRAME HOLDER | ANG1525 |
| | 218 | TRAY HOLDER L | ANG1539 |
| | 219 | TRAY HOLDER R | ANG1540 |
| | 220 | CORD HOLDER | AEC1020 |
| | 221 | CUSHION SHEET A | AEC1051 |
| | 222 | CUSHION SHEET B | AEC1111 |
| | 223 | PCB SUPPORT | AEC1237 |
| | 224 | MIRROR CUSHION | AEC1242 |
| | 225 | MIRROR CUSHION 50 | AEC1243 |
| | 226 | PC SUPPORT | AEC1286 |
| | 227 | CUSHION | AEC1300 |
| | 228 | CABLRE CLIP | AEC1325 |
| | 229 | BINDER | AEP-215 |
| | 230 | LEAD CLAMPER | AEP-329 |
| | 231 | • • • • • | |
| | 232 | • • • • • | |
| | 233 | • • • • • | |
| | 234 | BLIND PLATE | AMM1570 |
| | 235 | TRAY | AMR2246 |
| | 236 | BACK COVER PANEL | AMM1572 |
| | 237 | CABINET | AMM1643 |
| | 238 | MIRROR CASE | AME1019 |
| | 239 | DRY CELL BATTERY(R6P, AA) | AEX-010 |
| | 240 | CORRUGATED PAPER SPACER | AHB1079 |
| | 241 | PACKING BAG | AHG1035 |
| | 242 | PACKING SHEET | AHG1041 |
| | 243 | PACKING SHEET | AHG1078 |
| | 244 | PAL SOCKET | AKX-202 |

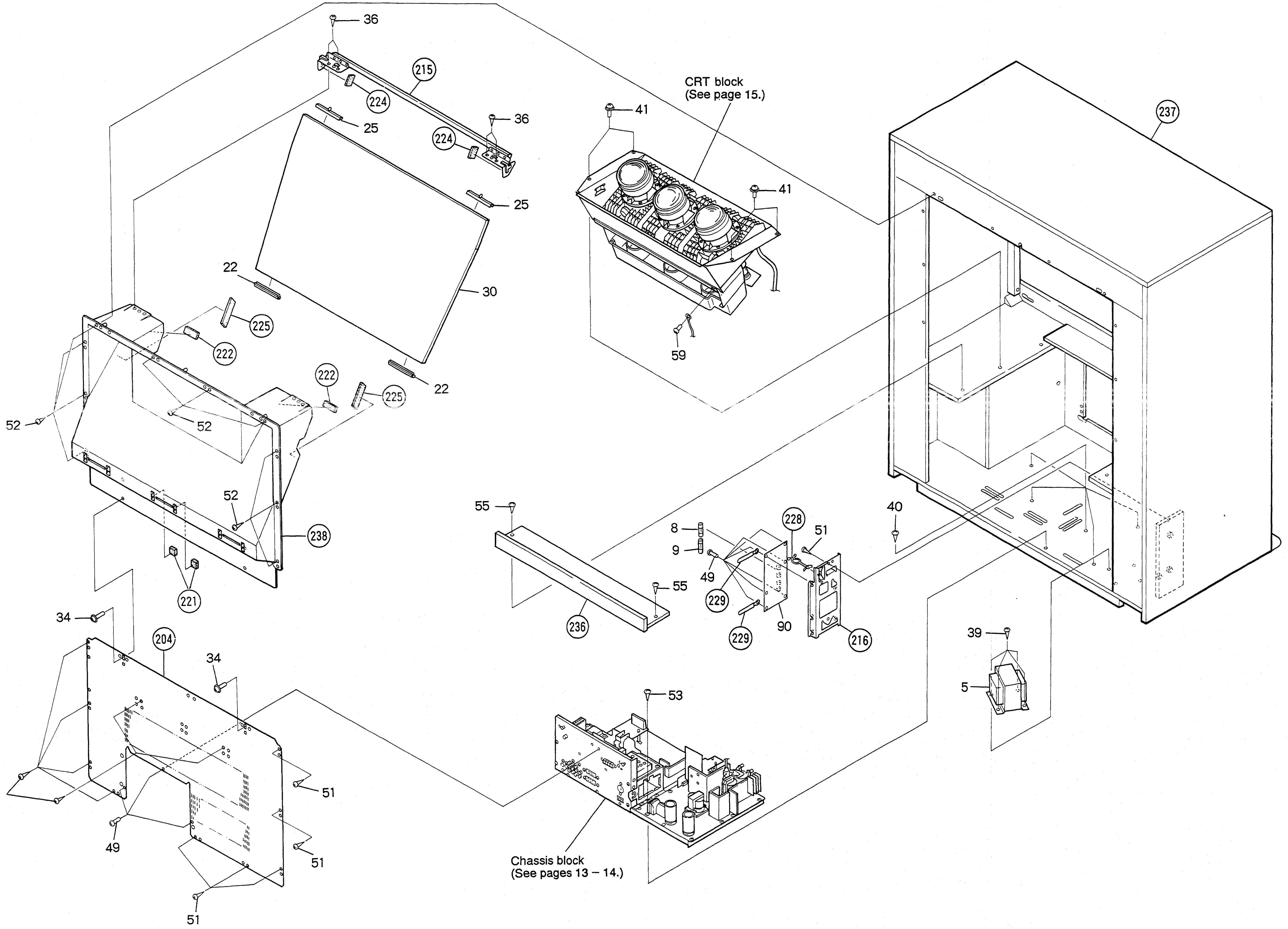
## 4.2 PACKING



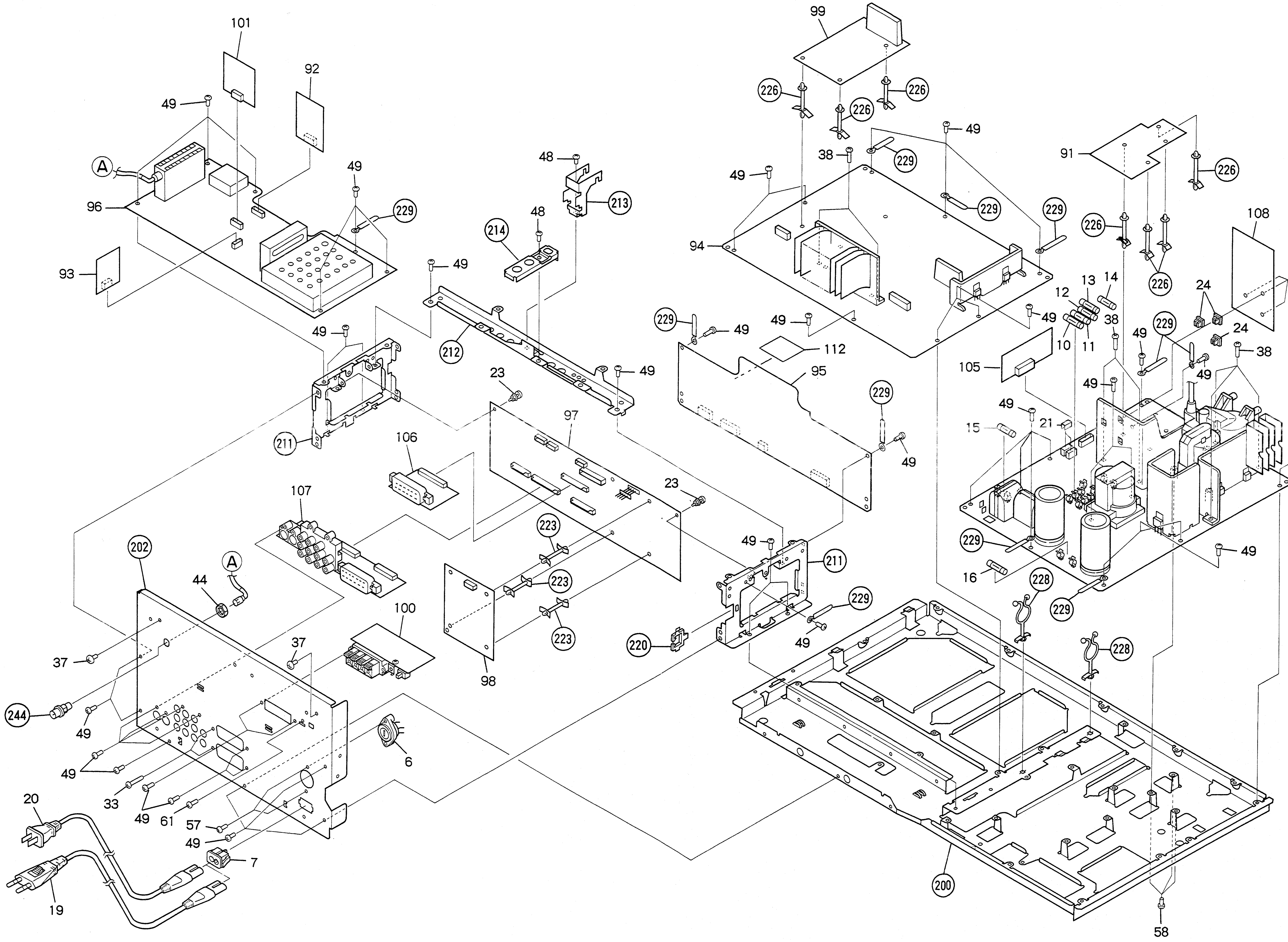
### 4.3 FRONT VIEW


237
210
51
227
210
51
208
54
207
54
54
208
32
31
69
46
210
51
17
18
51
51
49
1
51
206
109
110
18
51
109
110
109
110
109
110
227
67
209
54
35
54
217
54
209
35
51
17
68
52
50
50
72
103
102
66
64
52
63
70
46
104
49
228
49
234
205
52
229
60
229
60
49
52
65
71

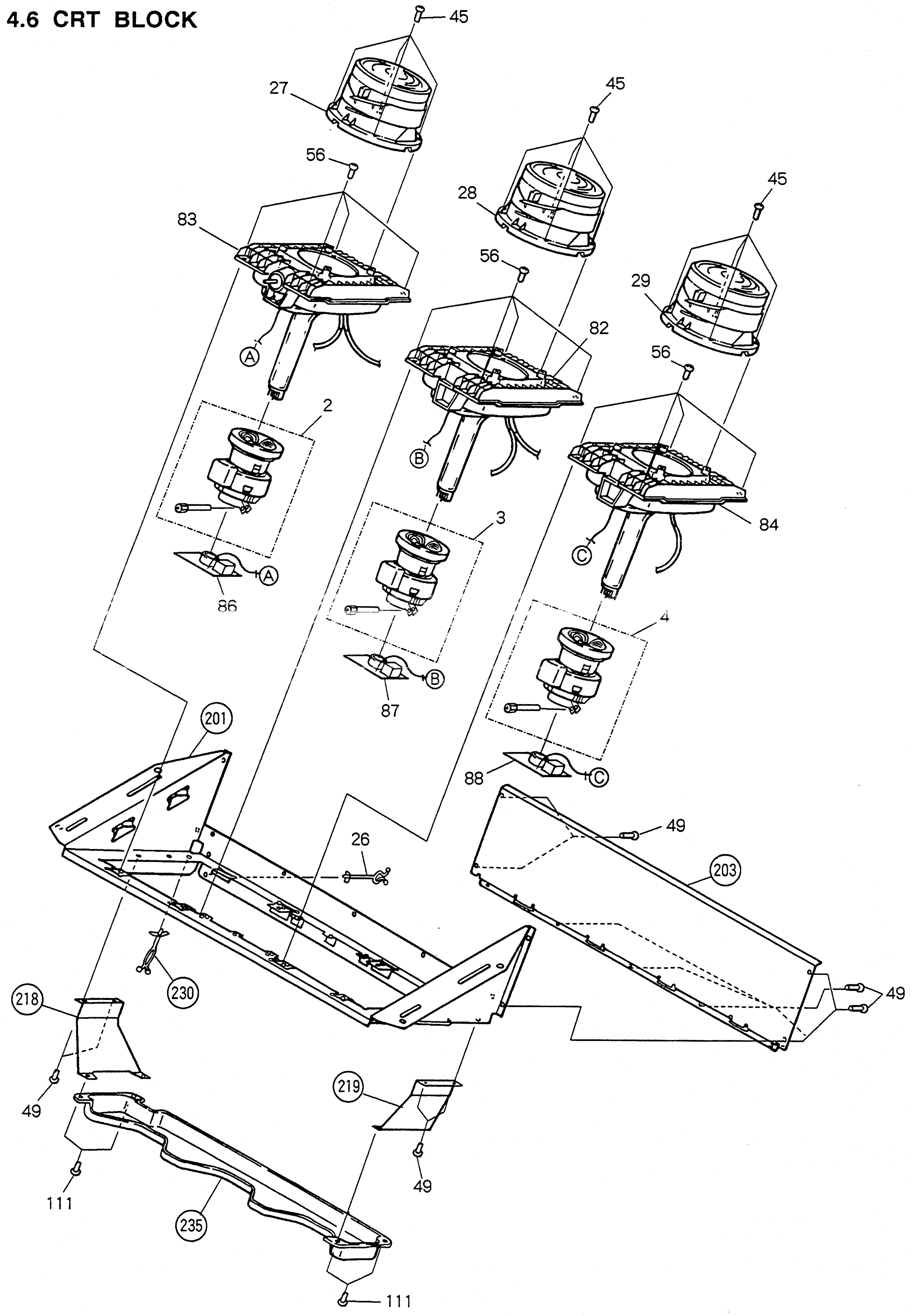
## 4.4 REAR VIEW


CRT block
(See page 15.)
Chassis block
(See pages 13 – 14.)

## 4.5 CHASSIS BLOCK


1
2
3
4
5
6
A
B
C
D
101
92
49
A
96
49
229
93
48
213
48
214
49
212
49
211
23
97
106
107
202
44
A
37
37
244
49
49
33
49
61
57
49
7
20
19
6
100
98
223
223
223
23
220
211
49
49
229
200
99
226
226
226
226
49
38
229
49
94
229
229
229
49
49
112
95
229
49
91
226
226
226
226
108
62
24
24
14
13
12
10
11
38
49
229
38
105
49
49
49
21
15
49
229
89
229
16
228
228
229
49
58

### 4.6 CRT BLOCK



## 5. SCHEMATIC AND P.C. BOARDS CONNECTION DIAGRAM

1. RESISTORS:
   Indicated in Ω , 1/4W, 1/6W and 1/8W, ± 5% tolerance unless otherwise noted k;k Ω , M;M Ω , (F); ± 1%, (G); ± 2%, (K); ± 10%, (M); ± 20% tolerance.

2. CAPACITORS:
   Indicated in capacity( μ F)/voltage(V)unless otherwise noted p;pF.
   Indication without voltage is 50V except electrolytic capacitor.

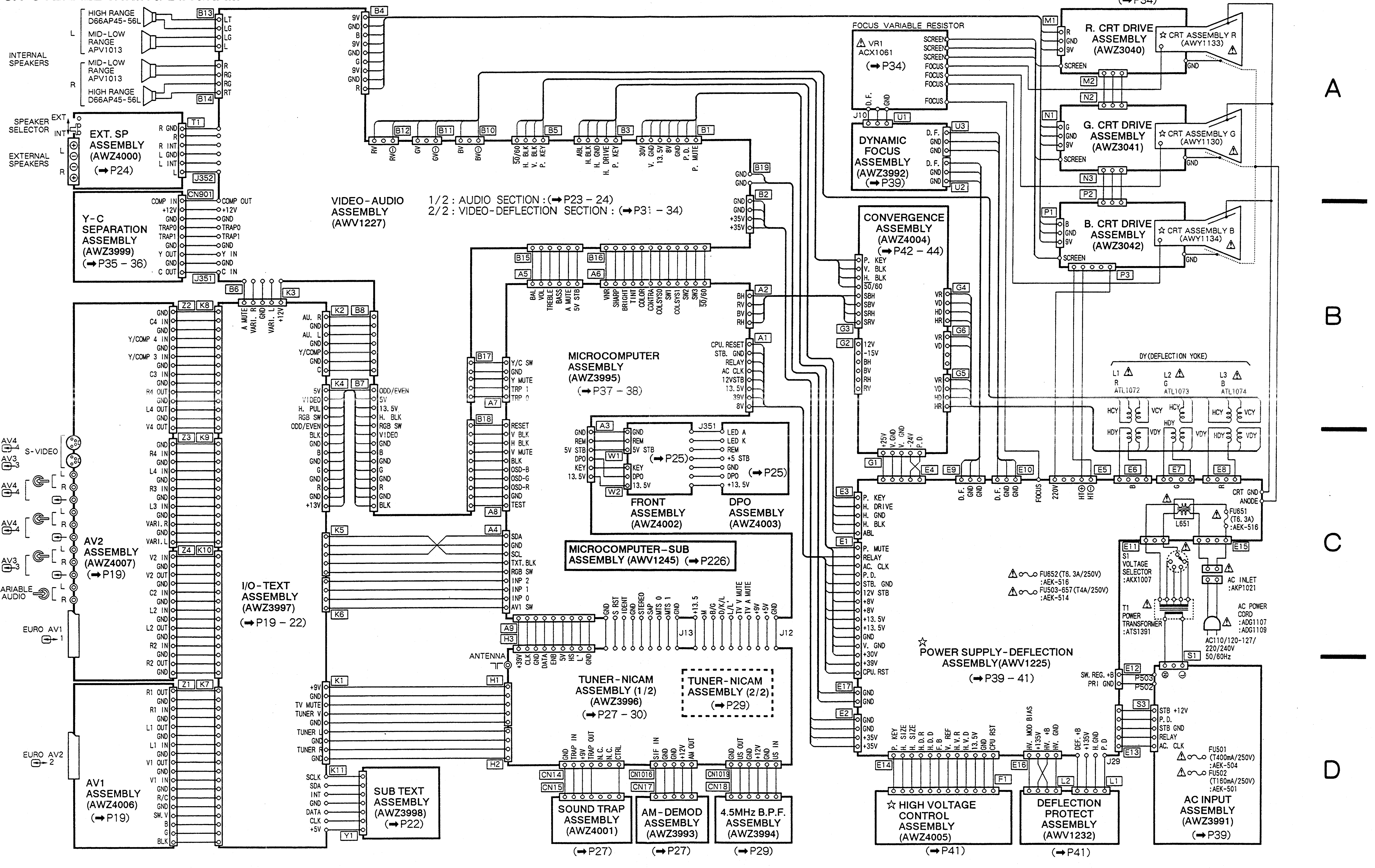
3. VOLTAGE, CURRENT:
   $\boxed{V}$ ; Signal voltage at 10W+10W, 8Ω output(1kHz)
   $\boxed{\phantom{V}}$ ; DC voltage(V)at no input signal without notice.
   Value in( )is color bar signal input state.
   ⇦mA ;DC current at no input signal without notice.

4. OTHERS:
   ➡;Signal route.
   ⊘;Adjusting point.

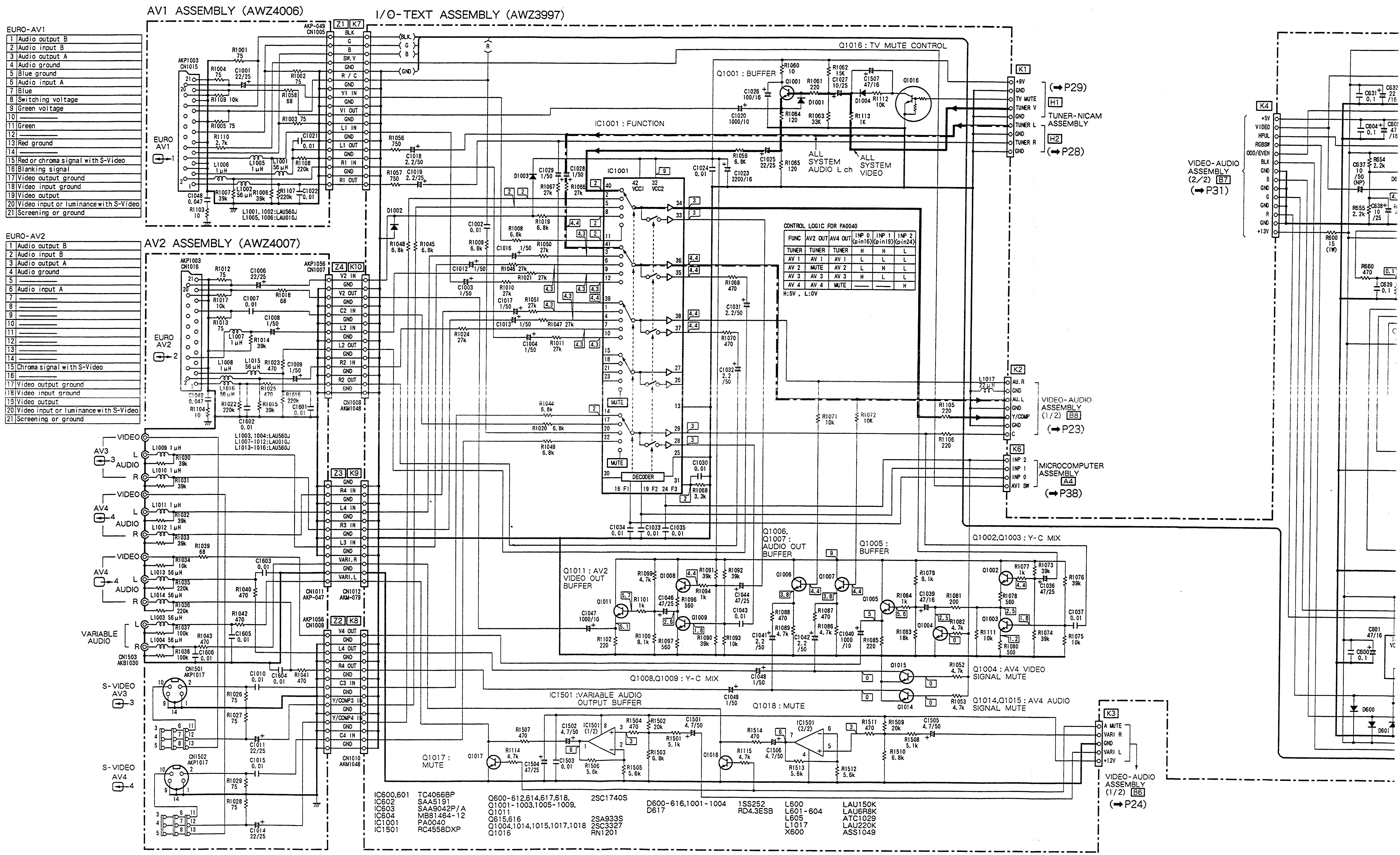
- ▼ (Red) ; Measurement point.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- ※ marked capacitors and resistors have parts numbers.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.
- Parts marked by ☆ are important parts which relate with X-ray radiation. If any of these parts need to be replaced, always replace with specified parts.
- Parts marked by × are important parts which relate with X-ray radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself.
  If any part marked by × is replaced, there is danger of being exposed to X-rays.
- Waveform ; Color bar input state.

5. SWITCHES:(The underlined indicates the switch position)
   EXT. SP ASSEMBLY
   S251:SPEAKER SELECTOR INT – EXT
   FRONT ASSEMBLY
   S851:POWER
   S852:PRESET MENU ON/OFF
   S853:FINE TUNE
   S854:TV SYSTEM
   S855:SET ⎤
   S856:SELECT/ADJ + ⎥ PRESET MENU
   S857:SELECT/ADJ – ⎦
   S858:FACTORY ADJ
   S859:DPO
   S860: ─•••─ /AV MEM
   S861: ⊿ +
   S862: ⊿ –
   S863:CH-PR +
   S864:CH-PR –
   S865:CH/PR
   S866: ⇥ (INPUT SELECTOR)

## 5.1 OVERALL WIRING DIAGRAM


INTERNAL SPEAKERS
HIGH RANGE D66AP45-56L
MID-LOW RANGE APV1013
SPEAKER SELECTOR
EXTERNAL SPEAKERS
EXT. SP ASSEMBLY (AWZ4000) (➡P24)
Y-C SEPARATION ASSEMBLY (AWZ3999) (➡P35 – 36)
VIDEO-AUDIO ASSEMBLY (AWV1227)
1/2 : AUDIO SECTION : (➡P23 – 24)
2/2 : VIDEO-DEFLECTION SECTION : (➡P31 – 34)
FOCUS VARIABLE RESISTOR
VR1 ACX1061 (➡P34)
DYNAMIC FOCUS ASSEMBLY (AWZ3992) (➡P39)
R. G. B. CRT DRIVE ASSEMBLIES (➡P34)
R. CRT DRIVE ASSEMBLY (AWZ3040)
CRT ASSEMBLY R (AWY1133)
G. CRT DRIVE ASSEMBLY (AWZ3041)
CRT ASSEMBLY G (AWY1130)
B. CRT DRIVE ASSEMBLY (AWZ3042)
CRT ASSEMBLY B (AWY1134)
CONVERGENCE ASSEMBLY (AWZ4004) (➡P42 – 44)
DY (DEFLECTION YOKE)
L1 R ATL1072
L2 G ATL1073
L3 B ATL1074
MICROCOMPUTER ASSEMBLY (AWZ3995) (➡P37 – 38)
FRONT ASSEMBLY (AWZ4002) (➡P25)
DPO ASSEMBLY (AWZ4003) (➡P25)
MICROCOMPUTER-SUB ASSEMBLY (AWV1245) (➡P226)
AV2 ASSEMBLY (AWZ4007) (➡P19)
AV1 ASSEMBLY (AWZ4006) (➡P19)
I/O-TEXT ASSEMBLY (AWZ3997) (➡P19 – 22)
SUB TEXT ASSEMBLY (AWZ3998) (➡P22)
S-VIDEO
VARIABLE AUDIO
EURO AV1
EURO AV2
ANTENNA
TUNER-NICAM ASSEMBLY (1/2) (AWZ3996) (➡P27 – 30)
TUNER-NICAM ASSEMBLY (2/2) (➡P29)
SOUND TRAP ASSEMBLY (AWZ4001) (➡P27)
AM-DEMOD ASSEMBLY (AWZ3993) (➡P27)
4.5MHz B.P.F. ASSEMBLY (AWZ3994) (➡P29)
POWER SUPPLY-DEFLECTION ASSEMBLY (AWV1225) (➡P39 – 41)
FU652 (T6.3A/250V) :AEK-516
FU503-657 (T4A/250V) :AEK-514
FU651 (T6.3A) :AEK-516
S1 VOLTAGE SELECTOR :AKX1007
T1 POWER TRANSFORMER :ATS1391
AC INLET :AKP1021
AC POWER CORD :ADG1107 :ADG1109
AC110/120-127/220/240V 50/60Hz
HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005) (➡P41)
DEFLECTION PROTECT ASSEMBLY (AWV1232) (➡P41)
AC INPUT ASSEMBLY (AWZ3991) (➡P39)
FU501 (T400mA/250V) :AEK-504
FU502 (T160mA/250V) :AEK-501
7
8
9
10
11
12
A
B
C
D

## 5.2 I/O-TEXT, AV 1, AV 2 AND SUB TEXT ASSEMBLIES



1
2
3
4
5
6
A
B
C
D
AV1 ASSEMBLY (AWZ4006)
I/O-TEXT ASSEMBLY (AWZ3997)
AV2 ASSEMBLY (AWZ4007)
EURO AV1
EURO AV2
AKP1003 CN1015
AKP1003 CN1016
AKP-049 CN1005
AKP1056 CN1007
Z1
K7
Z4
K10
Z3
K9
Z2
K8
BLK
G
B
SW. V
GND
R / C
V1 IN
V1 OUT
L1 IN
L1 OUT
R1 IN
R1 OUT
V2 IN
V2 OUT
C2 IN
L2 IN
L2 OUT
R2 IN
R2 OUT
R4 IN
L4 IN
R3 IN
L3 IN
VARI. R
VARI. L
V4 OUT
L4 OUT
R4 OUT
C3 IN
Y/COMP3 IN
Y/COMP4 IN
C4 IN
CN1008 AKM1048
CN1011 AKP-047
CN1012 AKM-079
AKP1056 CN1009
CN1010 AKM1048
L1001, 1002:LAU560J
L1005, 1006:LAU010J
L1003, 1004:LAU560J
L1007-1012:LAU010J
L1013-1016:LAU560J
AV3
AV4
VIDEO
AUDIO
VARIABLE AUDIO
CN1503 AKB1030
S-VIDEO AV3
S-VIDEO AV4
CN1501 AKP1017
CN1502 AKP1017
IC1001 : FUNCTION
IC1001
VCC1
VCC2
MUTE
DECODER
Q1001 : BUFFER
Q1016 : TV MUTE CONTROL
ALL SYSTEM AUDIO L ch
ALL SYSTEM VIDEO
K1
+9V
GND
TV MUTE
TUNER V
TUNER L
TUNER R
(➡P29)
H1
TUNER-NICAM ASSEMBLY
H2
(➡P28)
K2
AU. R
AU. L
Y/COMP
VIDEO-AUDIO ASSEMBLY (1/2) B8
(➡P23)
K6
INP 2
INP 1
INP 0
AV1 SW
MICROCOMPUTER ASSEMBLY A4
(➡P38)
K4
+5V
VIDEO
HPUL
RGBSW
ODD/EVEN
BLK
+13V
VIDEO-AUDIO ASSEMBLY (2/2) B7
(➡P31)
Q1002,Q1003 : Y-C MIX
Q1011 : AV2 VIDEO OUT BUFFER
Q1006, Q1007 : AUDIO OUT BUFFER
Q1005 : BUFFER
Q1008,Q1009 : Y-C MIX
Q1004 : AV4 VIDEO SIGNAL MUTE
Q1014,Q1015 : AV4 AUDIO SIGNAL MUTE
IC1501 :VARIABLE AUDIO OUTPUT BUFFER
Q1018 : MUTE
Q1017 : MUTE
K3
A MUTE
VARI R
VARI L
+12V
VIDEO-AUDIO ASSEMBLY (1/2) B6
(➡P24)

EURO-AV1

| | |
|---|---|
| 1 | Audio output B |
| 2 | Audio input B |
| 3 | Audio output A |
| 4 | Audio ground |
| 5 | Blue ground |
| 6 | Audio input A |
| 7 | Blue |
| 8 | Switching voltage |
| 9 | Green voltage |
| 10 | |
| 11 | Green |
| 12 | |
| 13 | Red ground |
| 14 | |
| 15 | Red or chroma signal with S-Video |
| 16 | Blanking signal |
| 17 | Video output ground |
| 18 | Video input ground |
| 19 | Video output |
| 20 | Video input or luminance with S-Video |
| 21 | Screening or ground |

EURO-AV2

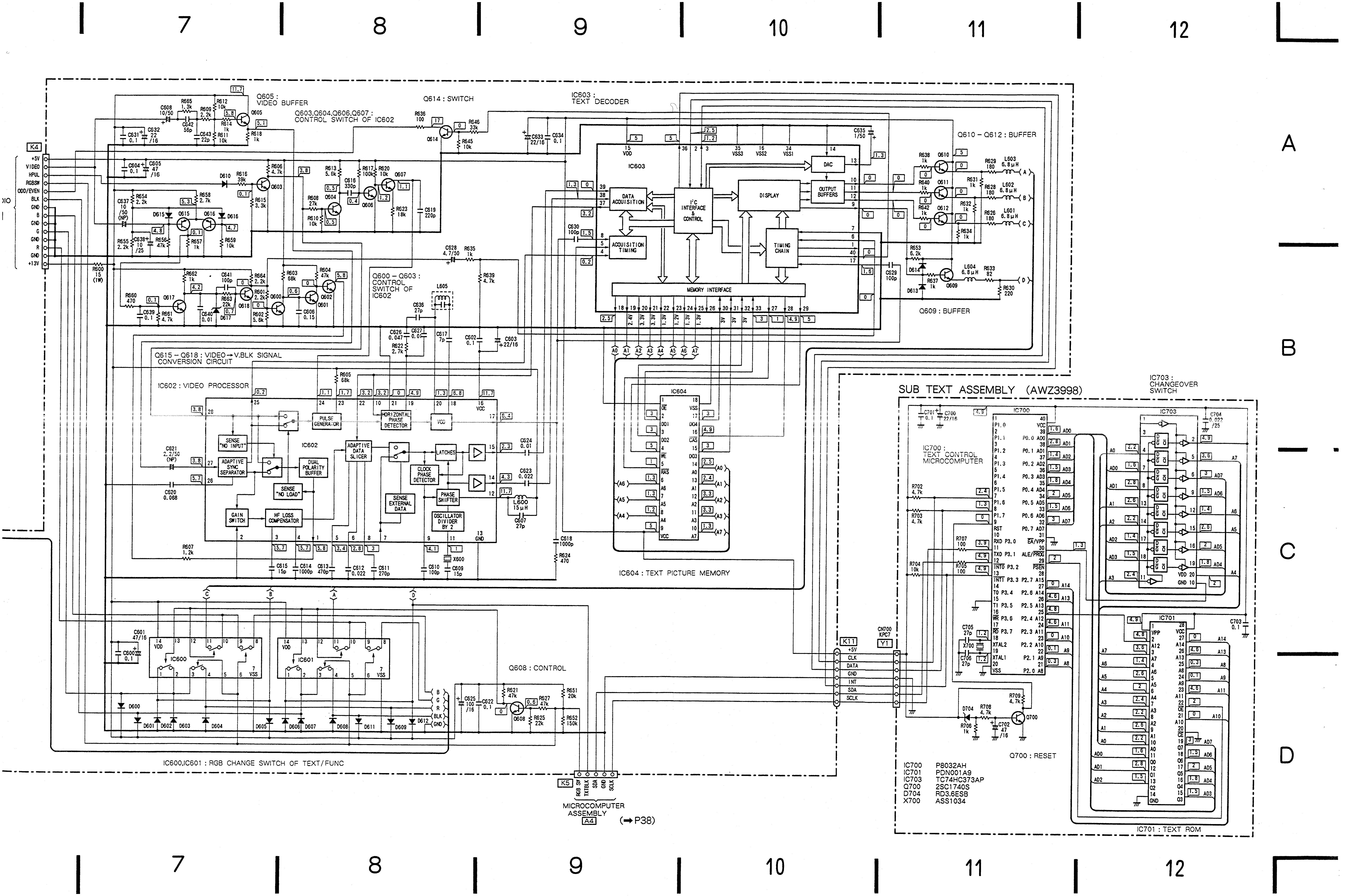
| | |
|---|---|
| 1 | Audio output B |
| 2 | Audio input B |
| 3 | Audio output A |
| 4 | Audio ground |
| 5 | |
| 6 | Audio input A |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 | Chroma signal with S-Video |
| 16 | |
| 17 | Video output ground |
| 18 | Video input ground |
| 19 | Video output |
| 20 | Video input or luminance with S-Video |
| 21 | Screening or ground |

CONTROL LOGIC FOR PA0040

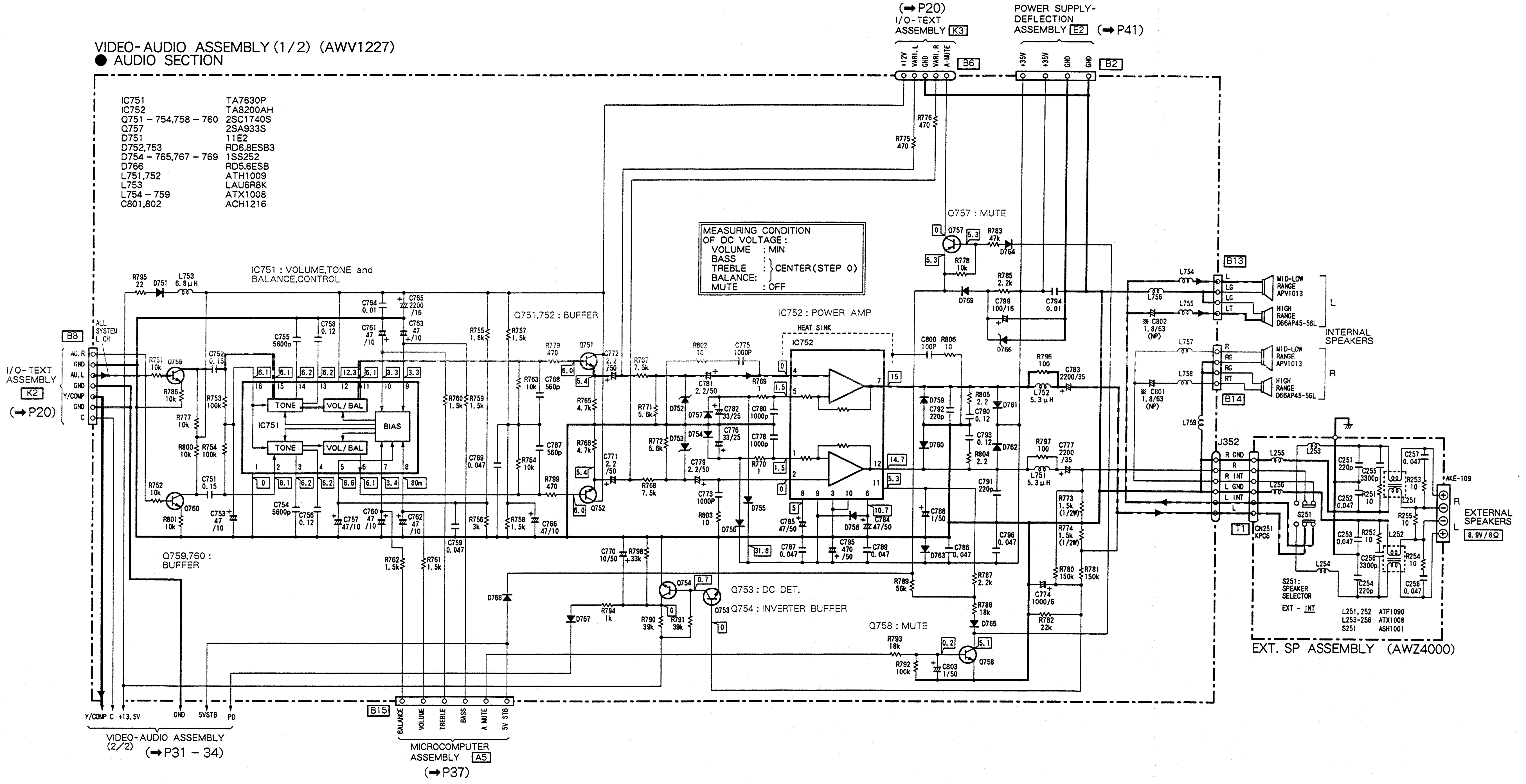
| FUNC | AV2 OUT | AV4 OUT | INP 0 (pin16) | INP 1 (pin19) | INP 2 (pin24) |
|---|---|---|---|---|---|
| TUNER | TUNER | TUNER | H | H | L |
| AV 1 | AV 1 | AV 1 | L | L | L |
| AV 2 | MUTE | AV 2 | L | H | L |
| AV 3 | AV 3 | AV 3 | H | L | L |
| AV 4 | AV 4 | MUTE | —— | —— | H |

H:5V , L:0V

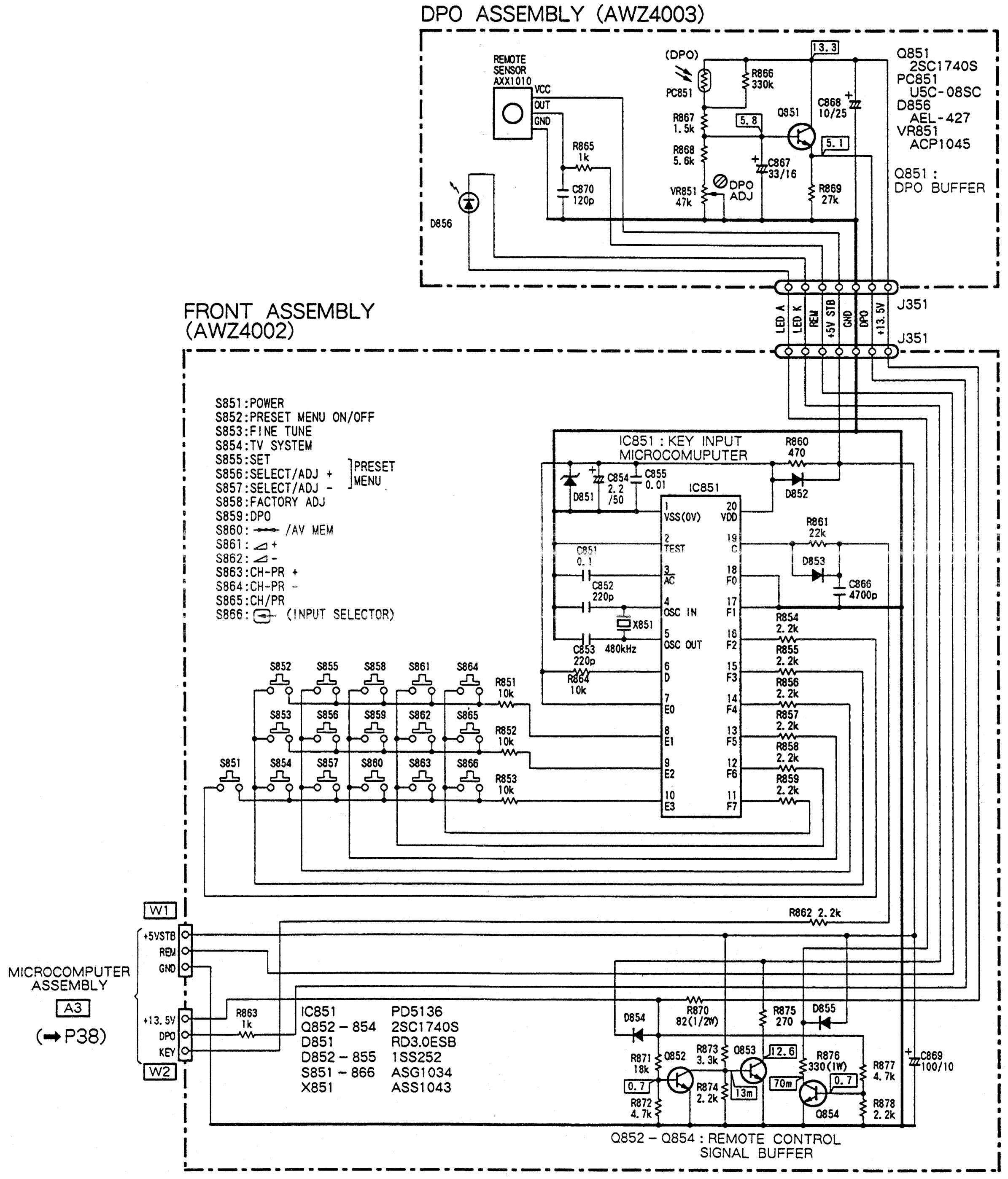
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| IC600,601 | TC4066BP | Q600-612,614,617,618,<br>Q1001-1003,1005-1009,<br>Q1011 | 2SC1740S | D600-616,1001-1004 | 1SS252 | L600 | LAU150K |
| IC602 | SAA5191 | | | D617 | RD4.3ESB | L601-604 | LAU6R8K |
| IC603 | SAA9042P/A | | | | | L605 | ATC1029 |
| IC604 | MB81464-12 | Q615,616 | 2SA933S | | | L1017 | LAU220K |
| IC1001 | PA0040 | Q1004,1014,1015,1017,1018 | 2SC3327 | | | X600 | ASS1049 |
| IC1501 | RC4558DXP | Q1016 | RN1201 | | | | |


7
8
9
10
11
12
A
B
C
D
K4
+5V
VIDEO
HPUL
RGBSW
ODD/EVEN
BLK
GND
B
GND
G
GND
R
GND
+13V
Q605 : VIDEO BUFFER
Q603,Q604,Q606,Q607 : CONTROL SWITCH OF IC602
Q614 : SWITCH
IC603 : TEXT DECODER
Q610 – Q612 : BUFFER
Q609 : BUFFER
Q600 – Q603 : CONTROL SWITCH OF IC602
Q615 – Q618 : VIDEO → V.BLK SIGNAL CONVERSION CIRCUIT
IC602 : VIDEO PROCESSOR
IC603
DATA ACQUISITION
ACQUISITION TIMING
I²C INTERFACE & CONTROL
DISPLAY
DAC
OUTPUT BUFFERS
TIMING CHAIN
MEMORY INTERFACE
IC602
SENSE "NO INPUT"
ADAPTIVE SYNC SEPARATOR
DUAL POLARITY BUFFER
SENSE "NO LOAD"
GAIN SWITCH
HF LOSS COMPENSATOR
PULSE GENERATOR
HORIZONTAL PHASE DETECTOR
VCC
ADAPTIVE DATA SLICER
LATCHES
CLOCK PHASE DETECTOR
SENSE EXTERNAL DATA
PHASE SHIFTER
OSCILLATOR DIVIDER BY 2
IC604
IC604 : TEXT PICTURE MEMORY
IC600
IC601
IC600,IC601 : RGB CHANGE SWITCH OF TEXT/FUNC
Q608 : CONTROL
K11
CN700 KPC7
Y1
+5V
CLK
DATA
GND
INT
SDA
SCLK
K5
RGB SW
TXTBLK
SDA
GND
SCLK
MICROCOMPUTER ASSEMBLY
A4
(➡P38)
SUB TEXT ASSEMBLY (AWZ3998)
IC700
IC700 : TEXT CONTROL MICROCOMPUTER
IC703 : CHANGEOVER SWITCH
IC703
IC701
IC701 : TEXT ROM
Q700 : RESET
IC700 P8032AH
IC701 PDN001A9
IC703 TC74HC373AP
Q700 2SC1740S
D704 RD3.6ESB
X700 ASS1034

## 5.3 VIDEO-AUDIO ASSEMBLY (1/2 : AUDIO SECTION) AND EXT. SP ASSEMBLY


VIDEO-AUDIO ASSEMBLY (1/2) (AWV1227)
● AUDIO SECTION
IC751 TA7630P
IC752 TA8200AH
Q751 – 754,758 – 760 2SC1740S
Q757 2SA933S
D751 11E2
D752,753 RD6.8ESB3
D754 – 765,767 – 769 1SS252
D766 RD5.6ESB
L751,752 ATH1009
L753 LAU6R8K
L754 – 759 ATX1008
C801,802 ACH1216
(➡P20)
I/O-TEXT ASSEMBLY K3
+12V VARI.L GND VARI.R A-MUTE
B6
POWER SUPPLY-DEFLECTION ASSEMBLY E2 (➡P41)
+35V +35V GND GND
B2
MEASURING CONDITION OF DC VOLTAGE :
VOLUME : MIN
BASS
TREBLE : CENTER(STEP 0)
BALANCE:
MUTE : OFF
IC751 : VOLUME,TONE and BALANCE,CONTROL
Q751,752 : BUFFER
IC752 : POWER AMP
HEAT SINK
Q757 : MUTE
Q759,760 : BUFFER
Q753 : DC DET.
Q754 : INVERTER BUFFER
Q758 : MUTE
TONE
VOL/BAL
BIAS
I/O-TEXT ASSEMBLY K2 (➡P20)
B8
AU.R GND AU.L GND Y/COMP GND C
ALL SYSTEM L CH
Y/COMP C +13.5V GND 5VSTB PD
VIDEO-AUDIO ASSEMBLY (2/2) (➡P31 – 34)
B15
BALANCE VOLUME TREBLE BASS A MUTE 5V STB
MICROCOMPUTER ASSEMBLY A5 (➡P37)
B13
L LG LG LT
MID-LOW RANGE APV1013
HIGH RANGE D66AP45-56L
L
INTERNAL SPEAKERS
B14
R RG RG RT
R
J352
R GND R R INT L GND L INT L
T1 CN251 KPC6
S251 : SPEAKER SELECTOR
EXT - INT
L251,252 ATF1090
L253-256 ATX1008
S251 ASH1001
AKE-109
EXTERNAL SPEAKERS
8.9V/8Ω
EXT. SP ASSEMBLY (AWZ4000)

## 5.4 DPO AND FRONT ASSEMBLIES


DPO ASSEMBLY (AWZ4003)
REMOTE SENSOR AXX1010
VCC
OUT
GND
D856
R865 1k
C870 120p
(DPO)
PC851
R866 330k
R867 1.5k
R868 5.6k
VR851 47k
DPO ADJ
5.8
Q851
C868 10/25
C867 33/16
5.1
13.3
R869 27k
Q851 2SC1740S
PC851 U5C-08SC
D856 AEL-427
VR851 ACP1045
Q851 : DPO BUFFER
J351
LED A
LED K
REM
+5V STB
GND
DPO
+13.5V
J351
FRONT ASSEMBLY (AWZ4002)
S851:POWER
S852:PRESET MENU ON/OFF
S853:FINE TUNE
S854:TV SYSTEM
S855:SET
S856:SELECT/ADJ +
S857:SELECT/ADJ -
PRESET MENU
S858:FACTORY ADJ
S859:DPO
S860: /AV MEM
S861: +
S862: -
S863:CH-PR +
S864:CH-PR -
S865:CH/PR
S866: (INPUT SELECTOR)
IC851 : KEY INPUT MICROCOMPUTER
IC851
D851
C854 2.2/50
C855 0.01
R860 470
D852
C851 0.1
C852 220p
C853 220p
480kHz
X851
R864 10k
VSS(0V)
VDD
TEST
AC
OSC IN
OSC OUT
R861 22k
D853
C866 4700p
R854 2.2k
R855 2.2k
R856 2.2k
R857 2.2k
R858 2.2k
R859 2.2k
S852 S855 S858 S861 S864
S853 S856 S859 S862 S865
S851 S854 S857 S860 S863 S866
R851 10k
R852 10k
R853 10k
W1
+5VSTB
REM
GND
MICROCOMPUTER ASSEMBLY
A3
(➡P38)
+13.5V
DPO
KEY
W2
R863 1k
IC851 PD5136
Q852 – 854 2SC1740S
D851 RD3.0ESB
D852 – 855 1SS252
S851 – 866 ASG1034
X851 ASS1043
R862 2.2k
D854
R870 82(1/2W)
R875 270
D855
R871 18k
Q852
R873 3.3k
Q853
12.6
R876 330(1W)
R877 4.7k
C869 100/10
0.7
R872 4.7k
R874 2.2k
13m
70m
0.7
Q854
R878 2.2k
Q852 – Q854 : REMOTE CONTROL SIGNAL BUFFER

## 5.5 TUNER-NICAM, AM-DEMOD, SOUND TRAP AND 4.5MHz B.P.F. ASSEMBLIES

**● Waveforms and voltages**

**(1) Voltage Indication**

- V :DC voltage (V) at no input signal without notice.
- Meaning of the marked (input signals are described in the below.)

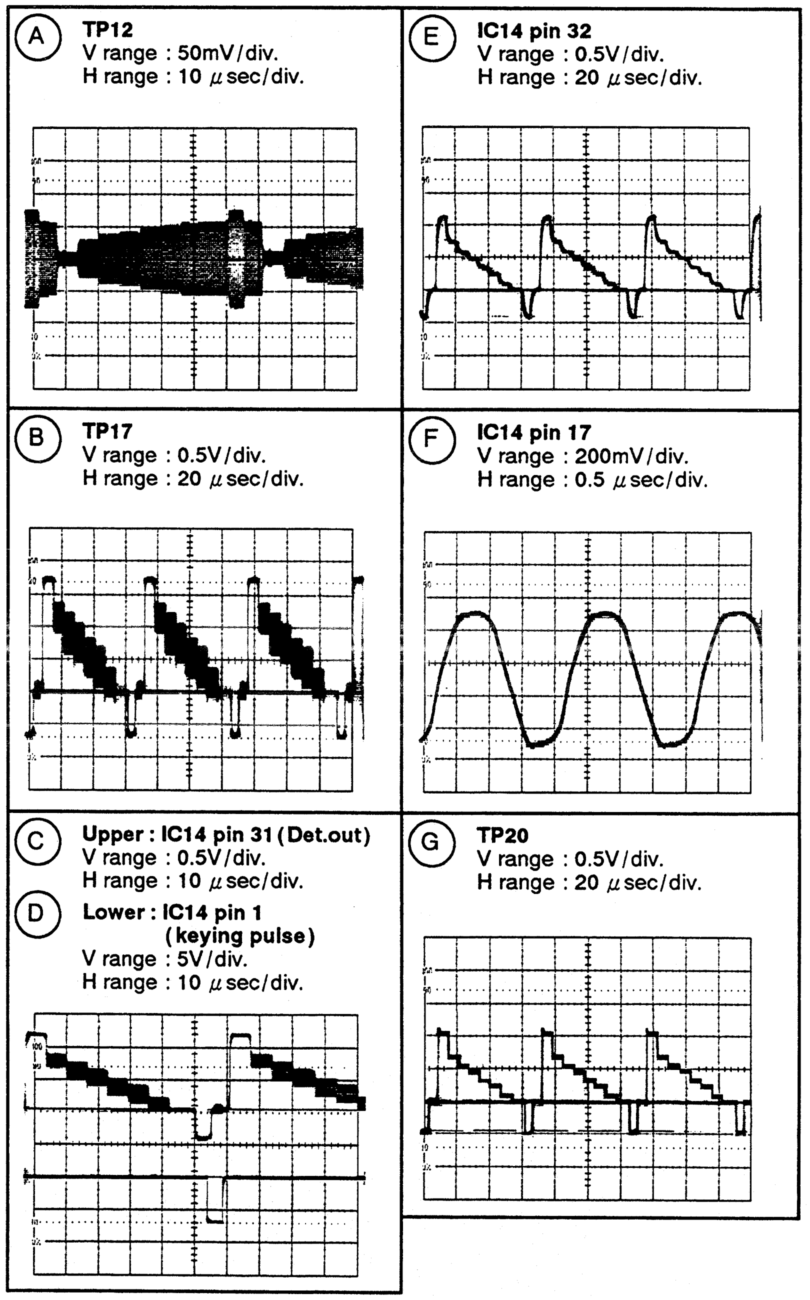
M :For input a signal of the system M.
B/G :For input a signal of the system B/G.
I :For input a signal of the system I.
D/K :For input a signal of the system D/K.
L/L' :For input a signal of the system L/L'.

**● Input Signal Contents**

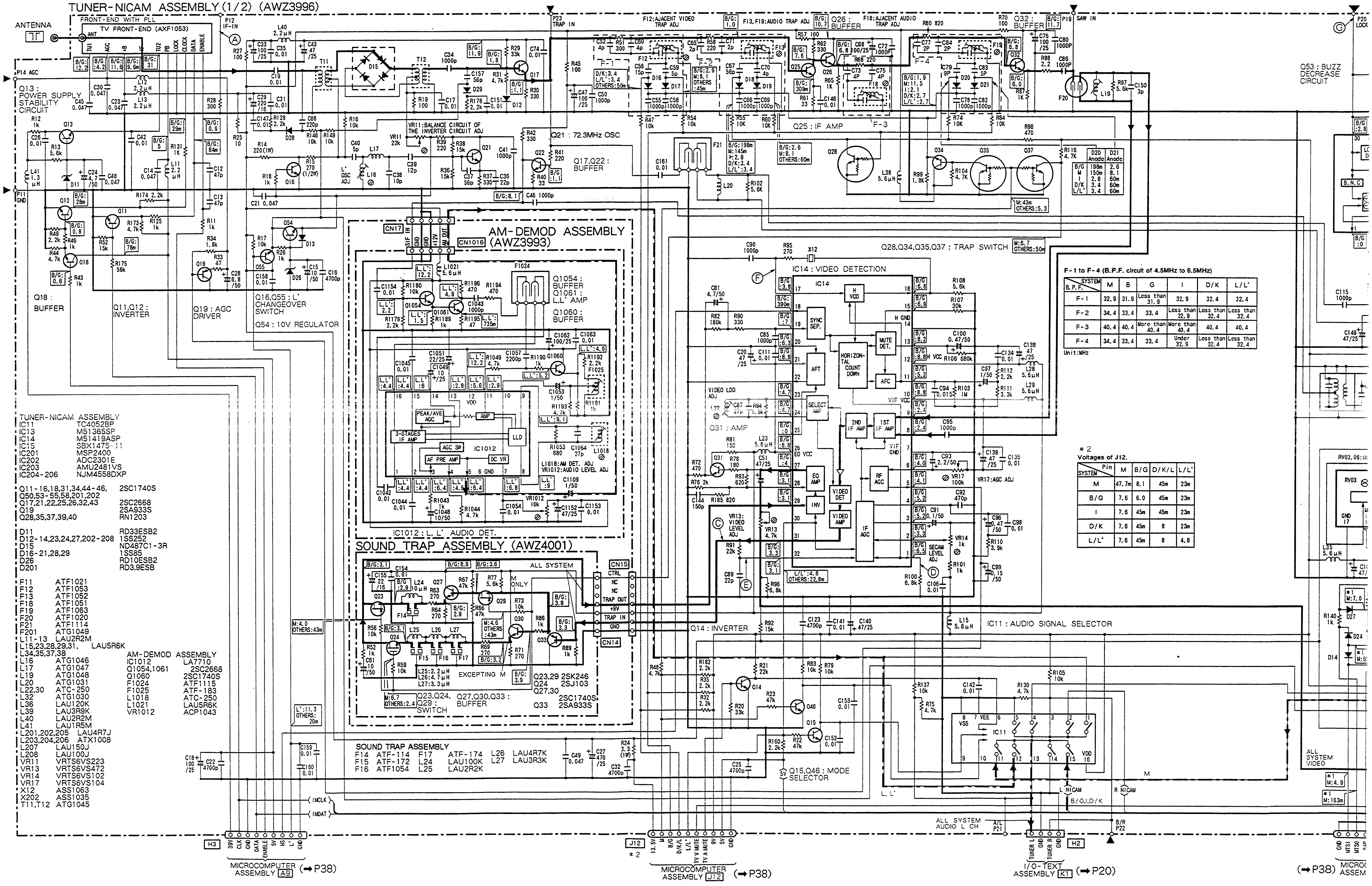
| | |
|---|---|
| System M | :US 9ch (fp=187.25MHz), NTSC color bar<br>Audio: 1kHz, 25kHz DEV.<br>RF intensity: 80dB µV |
| System B/G | :CCIR 7ch (fp=189.25MHz), PAL color bar (EBU)<br>Audio: 1kHz, 30kHz DEV.<br>RF intensity: 80dB µV |
| System I | :CCIR 7ch (fp=189.25MHz), PAL color bar (EBU)<br>Audio: 1kHz, 30kHz DEV.<br>RF intensity: 80dB µV |
| System D/K | :CCIR 7ch (fp=189.25MHz), SECAM color bar<br>Audio: 1kHz, 30kHz DEV.<br>RF intensity: 80dB µV |
| System L | :French F 1ch (fp=176MHz), SECAM color bar<br>Audio: 1kHz, 70% MOD.<br>RF intensity: 80dB µV |
| System L' | :French FC1 ch (fp=60.5MHz), SECAM color bar<br>Audio: 1kHz, 70% MOD.<br>RF intensity: 80dB µV |

**(2) Waveforms**

Input signal: System B/G, PAL color bar (EBU), fp=189.25MHz, 80dB µV
( Only Ⓐ is no audio carrier. )



## 5.5 TUNER-NICAM, AM-DENOD, SOUND TRAP AND 4.5MHz B.P.F. ASSEMBLIES


TUNER-NICAM ASSEMBLY (1/2) (AWZ3996)
ANTENNA
FRONT-END WITH PLL
TV FRONT-END (AXF1053)
P12 IF-IN
P14 AGC
P11 GND
P23 TRAP IN
P19 SAW IN
P20 LOCK
Q13 : POWER SUPPLY STABILITY CIRCUIT
Q18 : BUFFER
Q11,Q12 : INVERTER
Q19 : AGC DRIVER
Q16,Q55 : L' CHANGEOVER SWITCH
Q54 : 10V REGULATOR
VR11 : BALANCE CIRCUIT OF THE INVERTER CIRCUIT ADJ
Q21 : 72.3MHz OSC
Q17,Q22 : BUFFER
F12 : AJACENT VIDEO TRAP ADJ
F13, F19 : AUDIO TRAP ADJ
Q26 : BUFFER
F18 : AJACENT AUDIO TRAP ADJ
Q32 : BUFFER
Q25 : IF AMP
Q53 : BUZZ DECREASE CIRCUIT
Q28,Q34,Q35,Q37 : TRAP SWITCH
AM-DEMOD ASSEMBLY (AWZ3993)
Q1054 : BUFFER
Q1061 : L.L' AMP
Q1060 : BUFFER
IC1012
L1018 : AM DET. ADJ
VR1012 : AUDIO LEVEL ADJ
IC1012 : L, L' AUDIO DET.
SOUND TRAP ASSEMBLY (AWZ4001)
ALL SYSTEM
M ONLY
EXCEPTING M
Q23,Q24, Q29 : SWITCH
Q27,Q30,Q33 : BUFFER
Q23,29 2SK246
Q24 2SJ103
Q27,30 2SC1740S
Q33 2SA933S
IC14 : VIDEO DETECTION
VIDEO LDD ADJ
Q31 : AMP
VR13 : VIDEO LEVEL ADJ
VR17 : AGC ADJ
VR14 : SECAM LEVEL ADJ
Q14 : INVERTER
Q15,Q46 : MODE SELECTOR
IC11 : AUDIO SIGNAL SELECTOR
ALL SYSTEM VIDEO
ALL SYSTEM AUDIO L CH
MICROCOMPUTER ASSEMBLY A9 (→P38)
MICROCOMPUTER ASSEMBLY J12 (→P38)
I/O-TEXT ASSEMBLY K1 (→P20)
(→P38)
H3
J12
H2
*2

TUNER-NICAM ASSEMBLY

| | |
|---|---|
| IC11 | TC4052BP |
| IC13 | M51365SP |
| IC14 | M51419ASP |
| IC15 | SBX1475-11 |
| IC201 | MSP2400 |
| IC202 | ADC2301E |
| IC203 | AMU2481VS |
| IC204-206 | NJM4558DXP |
| Q11-16,18,31,34,44-46,<br>Q50,53-55,58,201,202 | 2SC1740S |
| Q17,21,22,25,26,32,43 | 2SC2668 |
| Q19 | 2SA933S |
| Q28,35,37,39,40 | RN1203 |
| D11 | RD33ESB2 |
| D12-14,23,24,27,202-208 | 1SS252 |
| D15 | ND487C1-3R |
| D16-21,28,29 | 1SS85 |
| D26 | RD10ESB2 |
| D201 | RD3.9ESB |
| F11 | ATF1021 |
| F12 | ATF1053 |
| F13 | ATF1052 |
| F18 | ATF1051 |
| F19 | ATF1063 |
| F20 | ATF1020 |
| F21 | ATF1114 |
| F201 | ATG1049 |
| L11-13 | LAU2R2M |
| L15,23,28,29,31,<br>L34,35,37,38 | LAU5R6K |
| L16 | ATG1046 |
| L17 | ATG1047 |
| L19 | ATG1048 |
| L20 | ATG1031 |
| L22,30 | ATC-250 |
| L32 | ATG1030 |
| L36 | LAU120K |
| L39 | LAU3R9K |
| L40 | LAU2R2M |
| L41 | LAU1R5M |
| L201,202,205 | LAU4R7J |
| L203,204,206 | ATX1008 |
| L207 | LAU150J |
| L208 | LAU100J |
| VR11 | VRTS6VS223 |
| VR13 | VRTS6VS472 |
| VR14 | VRTS6VS102 |
| VR17 | VRTS6VS104 |
| X12 | ASS1063 |
| X202 | ASS1035 |
| T11,T12 | ATG1045 |

AM-DEMOD ASSEMBLY

| | |
|---|---|
| IC1012 | LA7710 |
| Q1054,1061 | 2SC2668 |
| Q1060 | 2SC1740S |
| F1024 | ATF1115 |
| F1025 | ATF-183 |
| L1018 | ATC-250 |
| L1021 | LAU5R6K |
| VR1012 | ACP1043 |

SOUND TRAP ASSEMBLY

| | | | | | |
|---|---|---|---|---|---|
| F14 | ATF-114 | F17 | ATF-174 | L26 | LAU4R7K |
| F15 | ATF-172 | L24 | LAU100K | L27 | LAU3R3K |
| F16 | ATF1054 | L25 | LAU2R2K | | |

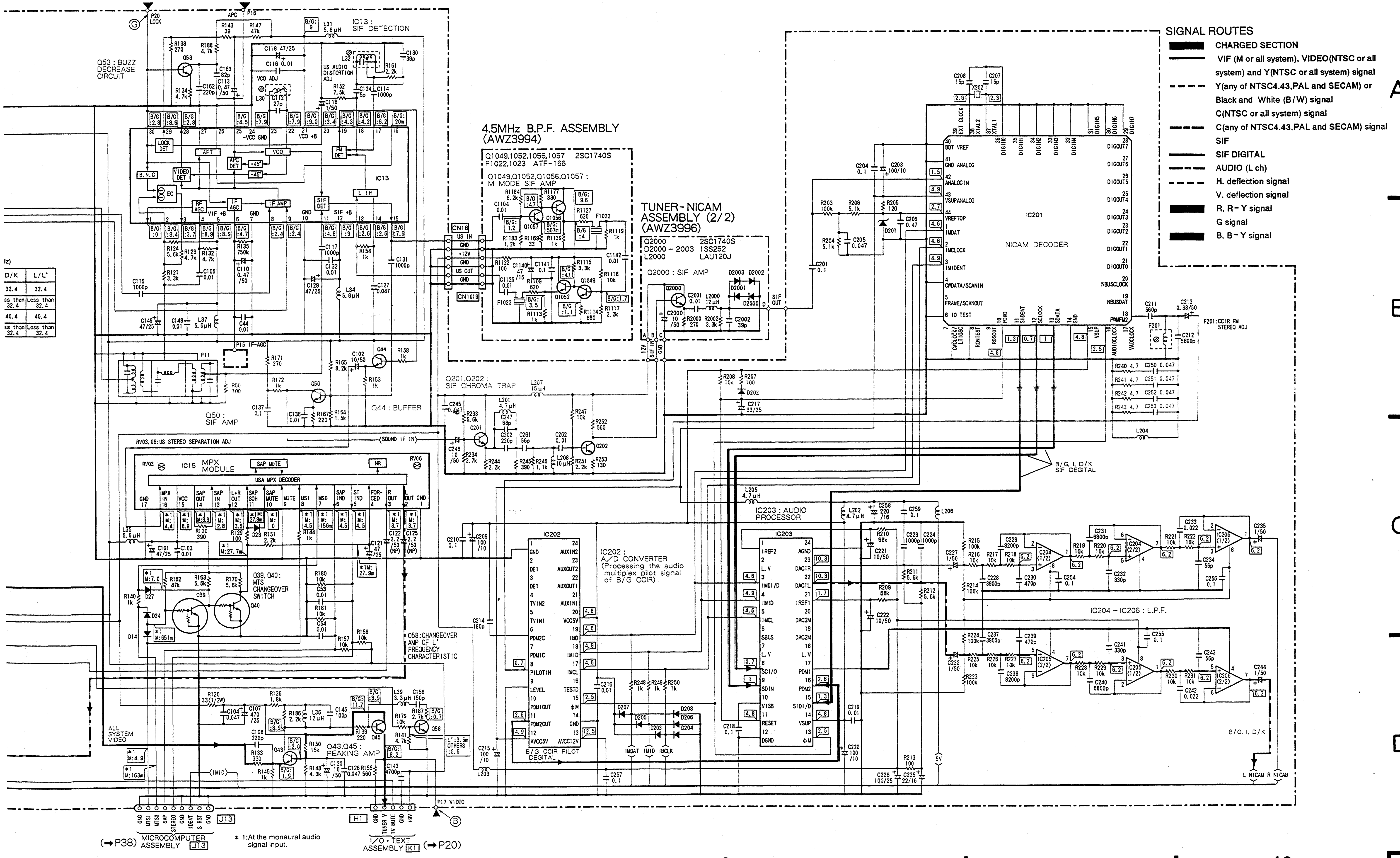
**F-1 to F-4 (B.P.F. circuit of 4.5MHz to 6.5MHz)**

| B.P.F. \ SYSTEM | M | B | G | I | D/K | L/L' |
|---|---|---|---|---|---|---|
| F-1 | 32.9 | 31.9 | Less than 31.9 | 32.9 | 32.4 | 32.4 |
| F-2 | 34.4 | 33.4 | 33.4 | Less than 32.9 | Less than 32.4 | Less than 32.4 |
| F-3 | 40.4 | 40.4 | More than 40.4 | More than 40.4 | 40.4 | 40.4 |
| F-4 | 34.4 | 33.4 | 33.4 | Under 32.9 | Less than 32.4 | Less than 32.4 |

Unit:MHz

*2
**Voltages of J12.**

| SYSTEM \ Pin | M | B/G | D/K/L | L/L' |
|---|---|---|---|---|
| M | 47.7m | 8.1 | 45m | 23m |
| B/G | 7.6 | 6.0 | 45m | 23m |
| I | 7.6 | 45m | 45m | 23m |
| D/K | 7.6 | 45m | 8 | 23m |
| L/L' | 7.6 | 45m | 8 | 4.8 |


SIGNAL ROUTES
CHARGED SECTION
VIF (M or all system), VIDEO(NTSC or all system) and Y(NTSC or all system) signal
Y(any of NTSC4.43,PAL and SECAM) or Black and White (B/W) signal
C(NTSC or all system) signal
C(any of NTSC4.43,PAL and SECAM) signal
SIF
SIF DIGITAL
AUDIO (L ch)
H. deflection signal
V. deflection signal
R, R−Y signal
G signal
B, B−Y signal
A
B
C
D
IC13 : SIF DETECTION
Q53 : BUZZ DECREASE CIRCUIT
US AUDIO DISTORTION ADJ
VCO ADJ
IC13
4.5MHz B.P.F. ASSEMBLY (AWZ3994)
Q1049,1052,1056,1057 2SC1740S
F1022,1023 ATF-166
Q1049,Q1052,Q1056,Q1057 : M MODE SIF AMP
TUNER-NICAM ASSEMBLY (2/2) (AWZ3996)
Q2000 2SC1740S
D2000 - 2003 1SS252
L2000 LAU120J
Q2000 : SIF AMP
CN18
CN1019
IC201
NICAM DECODER
F201:CCIR FM STEREO ADJ
Q50 : SIF AMP
Q44 : BUFFER
Q201,Q202 : SIF CHROMA TRAP
RV03,06:US STEREO SEPARATION ADJ
IC15 MPX MODULE
SAP MUTE
USA MPX DECODER
Q39,Q40: MTS CHANGEOVER SWITCH
Q58:CHANGEOVER AMP OF L' FREQUENCY CHARACTERISTIC
IC202 : A/D CONVERTER (Processing the audio multiplex pilot signal of B/G CCIR)
IC202
B/G CCIR PILOT DIGITAL
IC203 : AUDIO PROCESSOR
IC203
IC204 – IC206 : L.P.F.
B/G, I, D/K SIF DEGITAL
B/G, I, D/K
L NICAM R NICAM
Q43,Q45 : PEAKING AMP
ALL SYSTEM VIDEO
P17 VIDEO
P20 LOCK
P16 APC
P15 IF-AGC
(SOUND IF IN)
(IMID)
D/K | L/L'
32.4 | 32.4
Less than 32.4 | Less than 32.4
40.4 | 40.4
Less than 32.4 | Less than 32.4
J13
MICROCOMPUTER ASSEMBLY J13
(→P38)
*1:At the monaural audio signal input.
H1
I/O・TEXT ASSEMBLY K1
(→P20)

## 5.6 VIDEO–AUDIO ASSEMBLY (2/2:VIDEO–DEFLECTION SECTION), R., G. AND B. CRT DRIVE ASSEMBLIES

Note: DC voltage ( V) in the VIDEO - AUDIO assembly (2/2) is color bar signal input state.

- Switch the color system of connector B16

| Switch / Mode | SW1 (Pin5) | SW2 (Pin3) | SW3 (Pin2) |
|---|---|---|---|
| AUTO | L | L | M ∗ 1 |
| Manual PAL | H | H | H |
| Manual SECAM | H | L | H |
| Manual NTSC | L | L | H |
| Manual NTSC4.43 | L | H | H |

Note :Input signal from MICROCOMPUTER assembly except ∗ 1.
∗ 1 is output signal from IC356.
H : 6VDC, M : 2VDC, L : 0VDC

- Voltages of Q359 – Q361.

| | Q359 | | Q360 | | Q361 | |
|---|---|---|---|---|---|---|
| | B | C | B | C | B | C |
| NORMAL | – | 9 | 0.6 | 0 | 0.2 | 10.5 |
| S INPUT | – | 0 | 0 | 12 | 0.6 | 0 |
| SECAM | 11.4 | – | – | – | – | – |
| OTHER | 12 | – | – | – | – | – |

- Voltages of IC356 (TA8659AN) (Unit : V)

| Pin | Voltage (V) | Remarks | Pin | Voltage (V) | Remarks |
|---|---|---|---|---|---|
| 1 | 8.7 | – | 31 | – | – |
| 2 | 8 | – | 32 | – | – |
| 3 | 8.7 | – | 33 | 6 | – |
| 4 | 6.5 | 5. 5V for SECAM | 34 | – | – |
| 5 | 6.5 | | 35 | 4.1 | – |
| 6 | 12 | – | 36 | 7.5 | – |
| 7 | 3.3 | – | 37 | 3.1 | – |
| 8 | 6.5 | 5. 5V for SECAM | 38 | 6.7 | – |
| 9 | 6.5 | | 39 | 5.1 | – |
| 10 | – | Refer to Table 1 and 2. | 40 | 9.1 | – |
| 11 | – | | 41 | 2.8 | At the black level. |
| 12 | 5.2 | – | 42 | 2.8 | |
| 13 | 5.2 | – | 43 | 2.8 | |
| 14 | 10.3 | 8V for PAL, SECAM. | 44 | 3.2 | – |
| | | | 45 | 3.2 | – |
| 15 | 5.9 | – | 46 | 3.2 | – |
| 16 | 11.3 | 10. 7V for B/W, PAL, SECAM. | 47 | 6 | – |
| | | | 48 | 3 | – |
| 17 | 3.6 | – | 49 | 6 | – |
| 18 | 4.5 | 7. 5V for NTSC, NTSC 4. 43. | 50 | GND | – |
| | | | 51 | 6 | – |
| 19 | GND | – | 52 | GND | – |
| 20 | 5.9 | – | 53 | GND | – |
| 21 | – | Refer to Table 1 and 2. | 54 | GND | – |
| 22 | – | | 55 | 8.2 | – |
| 23 | – | | 56 | 3.3 | – |
| 24 | 5.8 | – | 57 | 5.9 | – |
| 25 | 6 | – | 58 | 4.8 | – |
| 26 | 3.2 | – | 59 | 3 | – |
| 27 | – | Refer to Table 1 and 2. | 60 | 6.2 | – |
| | | | 61 | 12 | – |
| 28 | 3.2 | – | 62 | 6.2 | – |
| 29 | – | – | 63 | 12 | – |
| 30 | 9.5 | – | 64 | 8 | – |

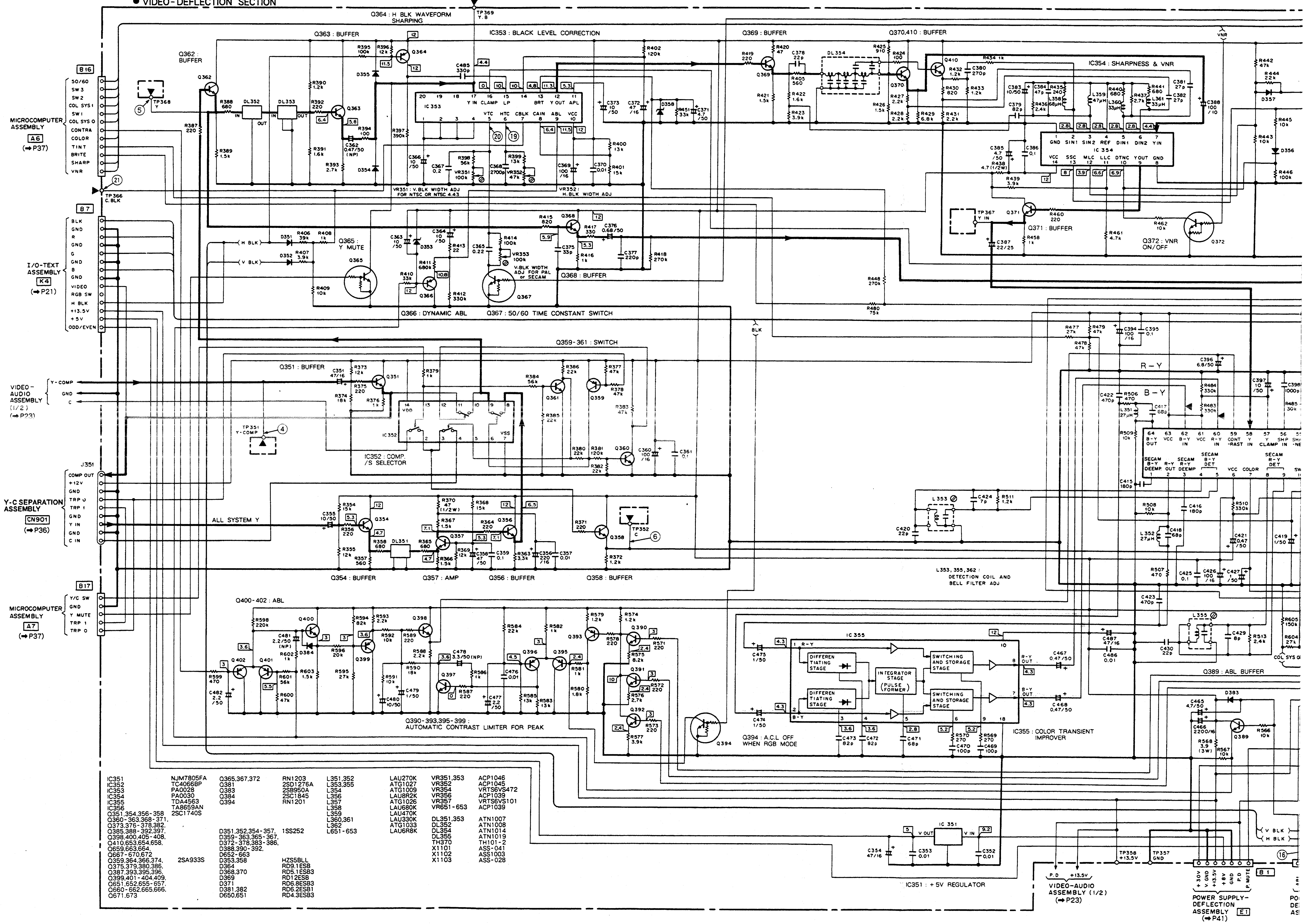
Table 1 Voltages of IC356 for AUTO mode (Unit : V)

| System / Pin | PAL | SECAM | NTSC4.43 | NTSC |
|---|---|---|---|---|
| 10 | 6 | 6 | 0 | 0 |
| 11 | 6 | 2 | 6 | 0 |
| 21 | 2 | 2 | 2 | 2 |
| 22 | 11.4 | 5.3 | 5.3 | 5.3 |
| 23 | 5.4 | 8 | 5.3 | 5.3 |
| 27 | 11 | 4.9 | 11 | 11 |

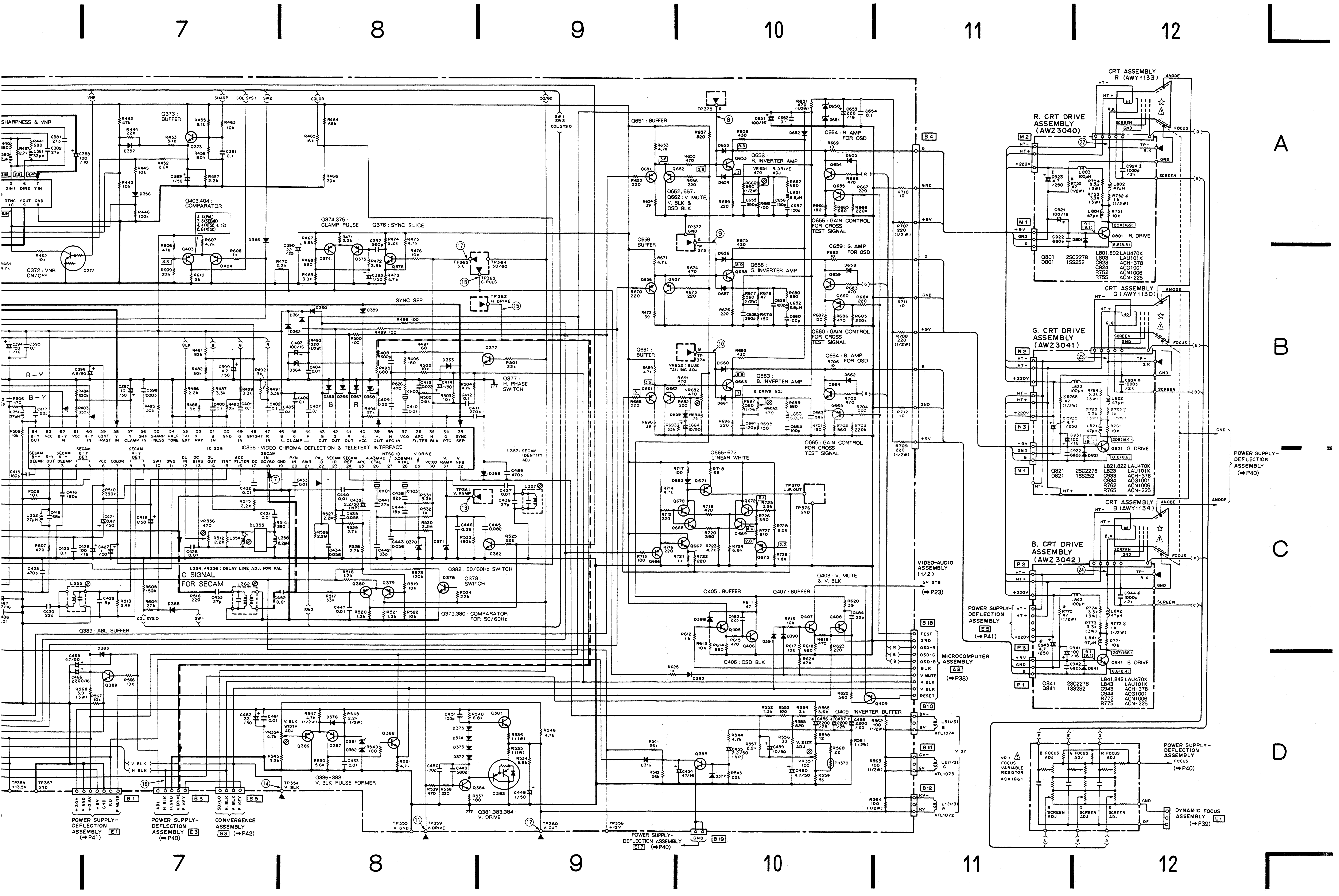
Table 2 Voltages of IC356 for Manual mode (Unit : V)

| System / Pin | PAL | SECAM | NTSC4.43 | NTSC |
|---|---|---|---|---|
| 10 | 6 | 6 | 0 | 0 |
| 11 | 6 | 0 | 6 | 0 |
| 21 | 6 | 6 | 6 | 6 |

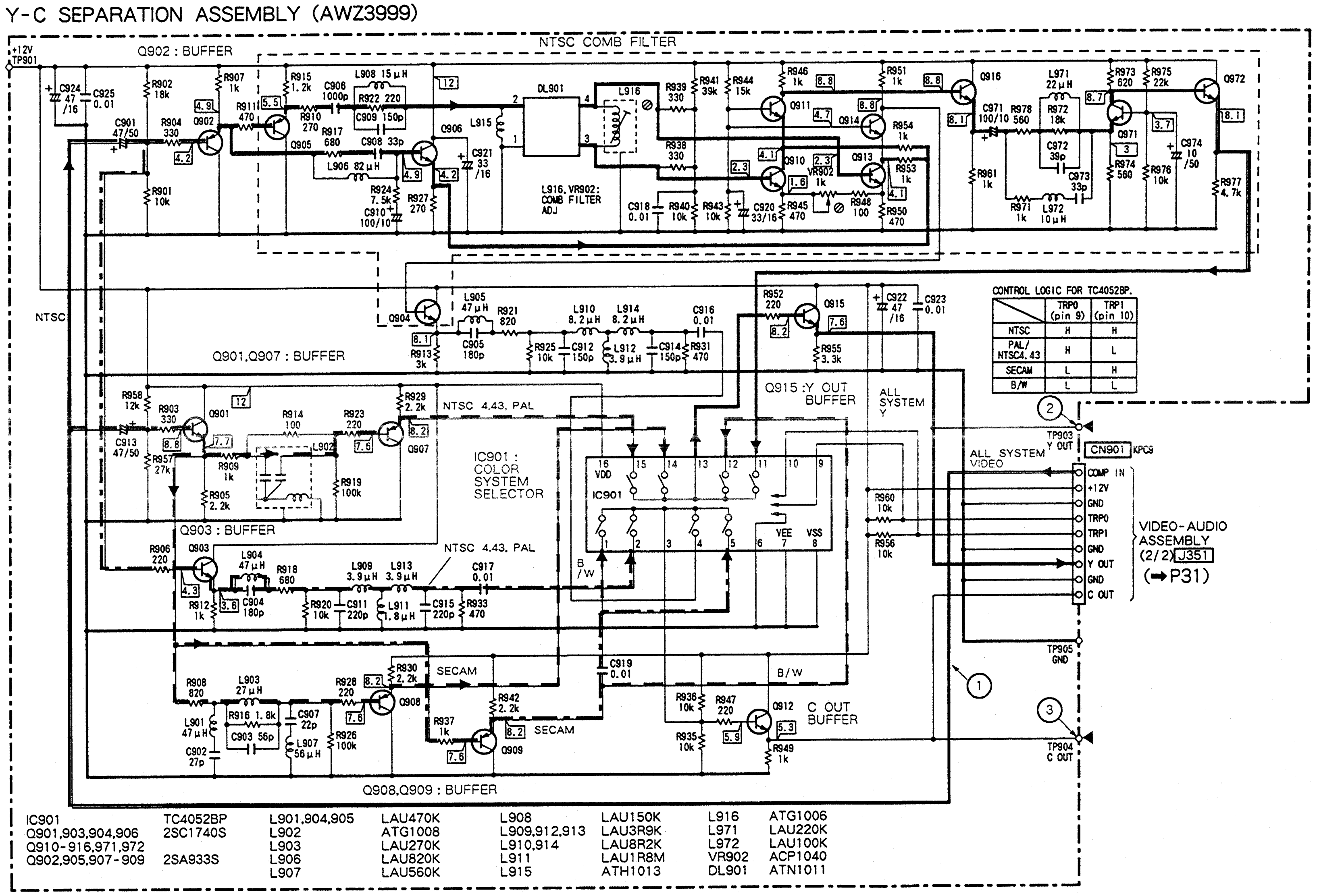
VIDEO-AUDIO ASSEMBLY (2/2) (AWV1227)
● VIDEO-DEFLECTION SECTION


A
B
C
D
Q364 : H BLK WAVEFORM SHARPING
TP369 Y. B
Q363 : BUFFER
IC353 : BLACK LEVEL CORRECTION
Q369 : BUFFER
Q370,410 : BUFFER
IC354 : SHARPNESS & VNR
Q362 BUFFER
B16
50/60
SW3
SW2
COL SYS I
SW1
COL SYS O
CONTRA
COLOR
TINT
BRITE
SHARP
VNR
MICROCOMPUTER ASSEMBLY
A6
(➡P37)
TP368 Y
DL352
DL353
IC353
Y IN CLAMP LP
VTC HTC CBLK CAIN ABL VCC
BRT Y OUT APL
DL354
VR351 : V.BLK WIDTH ADJ FOR NTSC OR NTSC 4.43
VR352 : H.BLK WIDTH ADJ
TP366 C.BLK
IC354
GND SIN1 SIN2 REF DIN1 DIN2 YIN
VCC SSC MLC LLC DTNC YOUT GND
B7
BLK
GND
R
GND
G
GND
B
GND
VIDEO
RGB SW
H BLK
+13.5V
+5V
ODD/EVEN
I/O-TEXT ASSEMBLY
K4
(➡P21)
H BLK
V BLK
Q365 Y MUTE
VR353 V.BLK WIDTH ADJ FOR PAL or SECAM
Q368 : BUFFER
TP367 Y IN
Q371 : BUFFER
Q372 : VNR ON/OFF
Q366 : DYNAMIC ABL
Q367 : 50/60 TIME CONSTANT SWITCH
BLK
Q359-361 : SWITCH
Q351 : BUFFER
VIDEO-AUDIO ASSEMBLY (1/2) (➡P23)
Y-COMP
GND
C
TP351 Y-COMP
IC352
IC352 : COMP. /S SELECTOR
R-Y
B-Y
J351
COMP OUT
+12V
GND
TRP U
TRP I
GND
Y IN
GND
C IN
Y-C SEPARATION ASSEMBLY
CN901
(➡P36)
ALL SYSTEM Y
DL351
TP352 C
Q354 : BUFFER
Q357 : AMP
Q356 : BUFFER
Q358 : BUFFER
L353 ⊘
L353, 355, 362 : DETECTION COIL AND BELL FILTER ADJ
B17
Y/C SW
GND
Y MUTE
TRP I
TRP O
MICROCOMPUTER ASSEMBLY
A7
(➡P37)
Q400-402 : ABL
IC355
DIFFERENTIATING STAGE
INTEGRATOR STAGE (PULSE FORMER)
SWITCHING AND STORAGE STAGE
R-Y OUT
B-Y OUT
L355 ⊘
Q389 : ABL BUFFER
COL SYS O
Q390-393,395-399 : AUTOMATIC CONTRAST LIMITER FOR PEAK
Q394 : A.C.L OFF WHEN RGB MODE
IC355 : COLOR TRANSIENT IMPROVER
IC 351
V OUT
V IN
IC351 : +5V REGULATOR
TP358 +13.5V
TP357 GND
P.D +13.5V
VIDEO-AUDIO ASSEMBLY (1/2) (➡P23)
V BLK
H BLK
+30V
+13.5V
+5V
GND
P.D
MUTE
B1
POWER SUPPLY-DEFLECTION ASSEMBLY E1 (➡P41)

| | |
|---|---|
| IC351 | NJM7805FA |
| IC352 | TC4066BP |
| IC353 | PA0028 |
| IC354 | PA0030 |
| IC355 | TDA4563 |
| IC356 | TA8659AN |
| Q351,354,356-358<br>Q360-363,368-371,<br>Q373,376-378,382,<br>Q385,388-392,397,<br>Q398,400,405-408,<br>Q410,653,654,658,<br>Q659,663,664,<br>Q667-670,672 | 2SC1740S |
| Q359,364,366,374,<br>Q375,379,380,386,<br>Q387,393,395,396,<br>Q399,401-404,409,<br>Q651,652,655-657,<br>Q660-662,665,666,<br>Q671,673 | 2SA933S |
| Q365,367,372 | RN1203 |
| Q381 | 2SD1276A |
| Q383 | 2SB950A |
| Q384 | 2SC1845 |
| Q394 | RN1201 |
| D351,352,354-357,<br>D359-363,365-367,<br>D372-378,383-386,<br>D388,390-392,<br>D652-663 | 1SS252 |
| D353,358 | HZS5BLL |
| D364 | RD9.1ESB |
| D368,370 | RD5.1ESB3 |
| D369 | RD12ESB |
| D371 | RD6.8ESB3 |
| D381,382 | RD6.2ESB1 |
| D650,651 | RD4.3ESB3 |
| L351,352 | LAU270K |
| L353,355 | ATG1027 |
| L354 | ATG1009 |
| L356 | LAU8R2K |
| L357 | ATG1026 |
| L358 | LAU680K |
| L359 | LAU470K |
| L360,361 | LAU330K |
| L362 | ATG1033 |
| L651-653 | LAU6R8K |
| VR351,353 | ACP1046 |
| VR352 | ACP1045 |
| VR354 | VRTS6VS472 |
| VR356 | ACP1039 |
| VR357 | VRTS6VS101 |
| VR651-653 | ACP1039 |
| DL351,353 | ATN1007 |
| DL352 | ATN1008 |
| DL354 | ATN1014 |
| DL355 | ATN1019 |
| TH370 | TH101-2 |
| X1101 | ASS-041 |
| X1102 | ASS1003 |
| X1103 | ASS-028 |


7
8
9
10
11
12
A
B
C
D
SHARPNESS & VNR
Q373 : BUFFER
Q372 : VNR ON/OFF
Q403,404 : COMPARATOR
4. 4(PAL)
2. 5(SECAM)
4. 4(NTSC 4. 43)
0. 6(NTSC)
Q374,375 : CLAMP PULSE
Q376 : SYNC SLICE
TP363 S.C
TP364 50/60
TP363 C.PULS
TP362 H. DRIVE
SYNC SEP.
Q377 : H. PHASE SWITCH
R - Y
B - Y
IC356 : VIDEO CHROMA DEFLECTION & TELETEXT INTERFACE
TP361 V. RAMP
L357 : SECAM IDENTITY ADJ
VR356 470
DL355
C SIGNAL FOR SECAM
L354,VR356 : DELAY LINE ADJ. FOR PAL
Q382 : 50/60Hz SWITCH
Q378 : SWITCH
Q373,380 : COMPARATOR FOR 50/60Hz
Q389 : ABL BUFFER
Q386-388 : V. BLK PULSE FORMER
V. BLK WIDTH ADJ
Q381,383,384 : V. DRIVE
TP358 +13.5V
TP357 GND
TP354 V. BLK
TP355 V. GND
TP359 V. DRIVE
TP360 V. OUT
TP356 +12V
POWER SUPPLY-DEFLECTION ASSEMBLY E1 (➡P41)
POWER SUPPLY-DEFLECTION ASSEMBLY E3 (➡P40)
CONVERGENCE ASSEMBLY G3 (➡P42)
POWER SUPPLY-DEFLECTION ASSEMBLY E17 (➡P40)
Q651 : BUFFER
Q652,657, Q662 : V. MUTE, V. BLK & OSD BLK
Q653 : R. INVERTER AMP
R. DRIVE ADJ
Q654 : R AMP FOR OSD
Q655 : GAIN CONTROL FOR CROSS TEST SIGNAL
Q656 BUFFER
Q658 : G. INVERTER AMP
Q659 : G. AMP FOR OSD
Q660 : GAIN CONTROL FOR CROSS TEST SIGNAL
Q661 : BUFFER
VR652 : BLUE TAILING ADJ
Q663 : B. INVERTER AMP
B. DRIVE ADJ
Q664 : B. AMP FOR OSD
Q665 : GAIN CONTROL FOR CROSS TEST SIGNAL
Q666-673 : LINEAR WHITE
TP370 L.W. OUT
TP376 GND
TP375 R
TP377 GND
TP373 G
TP374 B
Q405 : BUFFER
Q407 : BUFFER
Q408 : V. MUTE & V. BLK
Q406 : OSD BLK
Q409 : INVERTER BUFFER
V. SIZE ADJ
VIDEO-AUDIO ASSEMBLY (1/2) 5V STB (➡P23)
MICROCOMPUTER ASSEMBLY A8 (➡P38)
TEST
GND
OSD-R
OSD-G
OSD-B
BLK
V.MUTE
H.BLK
V.BLK
RESET
L3(1/3) B ATL1074
L2(1/3) G ATL1073
L1(1/3) R ATL1072
V DY
CRT ASSEMBLY R (AWY1133)
R. CRT DRIVE ASSEMBLY (AWZ3040)
Q801 R. DRIVE
Q801 2SC2278
D801 1SS252
L801,802 LAU470K
L803 LAU101K
C923 ACH-378
C924 ACG1001
R752 ACN1006
R755 ACN-225
CRT ASSEMBLY G (AWY1130)
G. CRT DRIVE ASSEMBLY (AWZ3041)
Q821 G. DRIVE
Q821 2SC2278
D821 1SS252
L821,822 LAU470K
L823 LAU101K
C933 ACH-378
C934 ACG1001
R762 ACN1006
R765 ACN-225
CRT ASSEMBLY B (AWY1134)
B. CRT DRIVE ASSEMBLY (AWZ3042)
Q841 B. DRIVE
Q841 2SC2278
D841 1SS252
L841,842 LAU470K
L843 LAU101K
C943 ACH-378
C944 ACG1001
R772 ACN1006
R775 ACN-225
POWER SUPPLY-DEFLECTION ASSEMBLY (➡P40)
POWER SUPPLY-DEFLECTION ASSEMBLY E5 (➡P41)
ANODE
FOCUS
SCREEN
VR1 FOCUS VARIABLE RESISTOR ACX1061
B FOCUS ADJ
G FOCUS ADJ
R FOCUS ADJ
B SCREEN ADJ
G SCREEN ADJ
R SCREEN ADJ
POWER SUPPLY-DEFLECTION ASSEMBLY FOCUS (➡P40)
DYNAMIC FOCUS ASSEMBLY U1 (➡P39)

## 5.7 Y-C SEPARATION ASSEMBLY

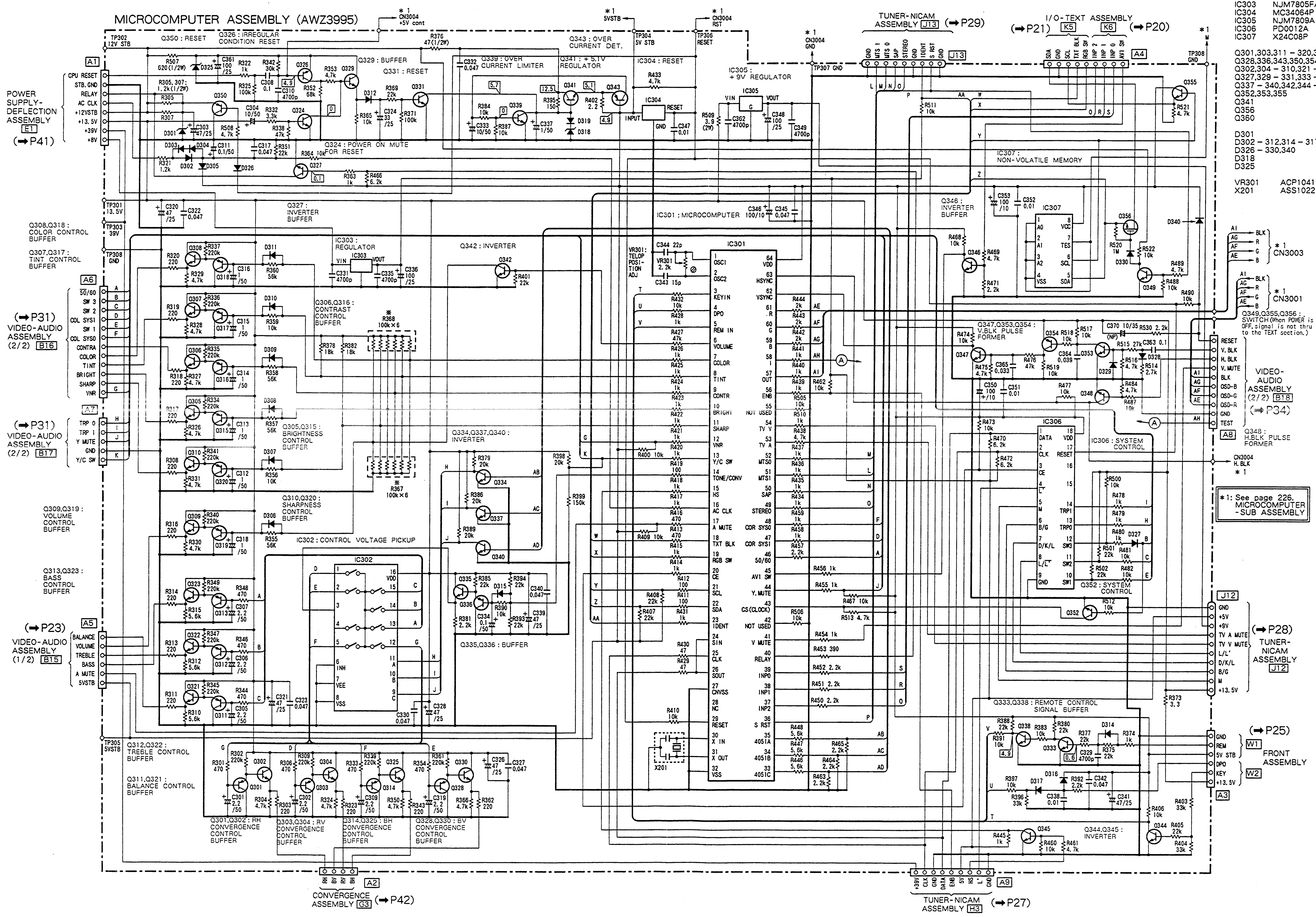

Y-C SEPARATION ASSEMBLY (AWZ3999)
NTSC COMB FILTER
Q902 : BUFFER
+12V
TP901
DL901
L916, VR902: COMB FILTER ADJ
NTSC
Q901,Q907 : BUFFER
Q903 : BUFFER
Q908,Q909 : BUFFER
Q915 :Y OUT BUFFER
ALL SYSTEM Y
IC901 : COLOR SYSTEM SELECTOR
NTSC 4.43, PAL
SECAM
B/W
C OUT BUFFER
ALL SYSTEM VIDEO
TP903 Y OUT
CN901 KPC9
COMP IN
+12V
GND
TRP0
TRP1
GND
Y OUT
GND
C OUT
VIDEO-AUDIO ASSEMBLY (2/2) J351 (➡P31)
TP905 GND
TP904 C OUT
①
②
③

CONTROL LOGIC FOR TC4052BP.

| | TRP0 (pin 9) | TRP1 (pin 10) |
|---|---|---|
| NTSC | H | H |
| PAL/ NTSC4.43 | H | L |
| SECAM | L | H |
| B/W | L | L |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| IC901 | TC4052BP | L901,904,905 | LAU470K | L908 | LAU150K | L916 | ATG1006 |
| Q901,903,904,906 | 2SC1740S | L902 | ATG1008 | L909,912,913 | LAU3R9K | L971 | LAU220K |
| Q910-916,971,972 | | L903 | LAU270K | L910,914 | LAU8R2K | L972 | LAU100K |
| Q902,905,907-909 | 2SA933S | L906 | LAU820K | L911 | LAU1R8M | VR902 | ACP1040 |
| | | L907 | LAU560K | L915 | ATH1013 | DL901 | ATN1011 |

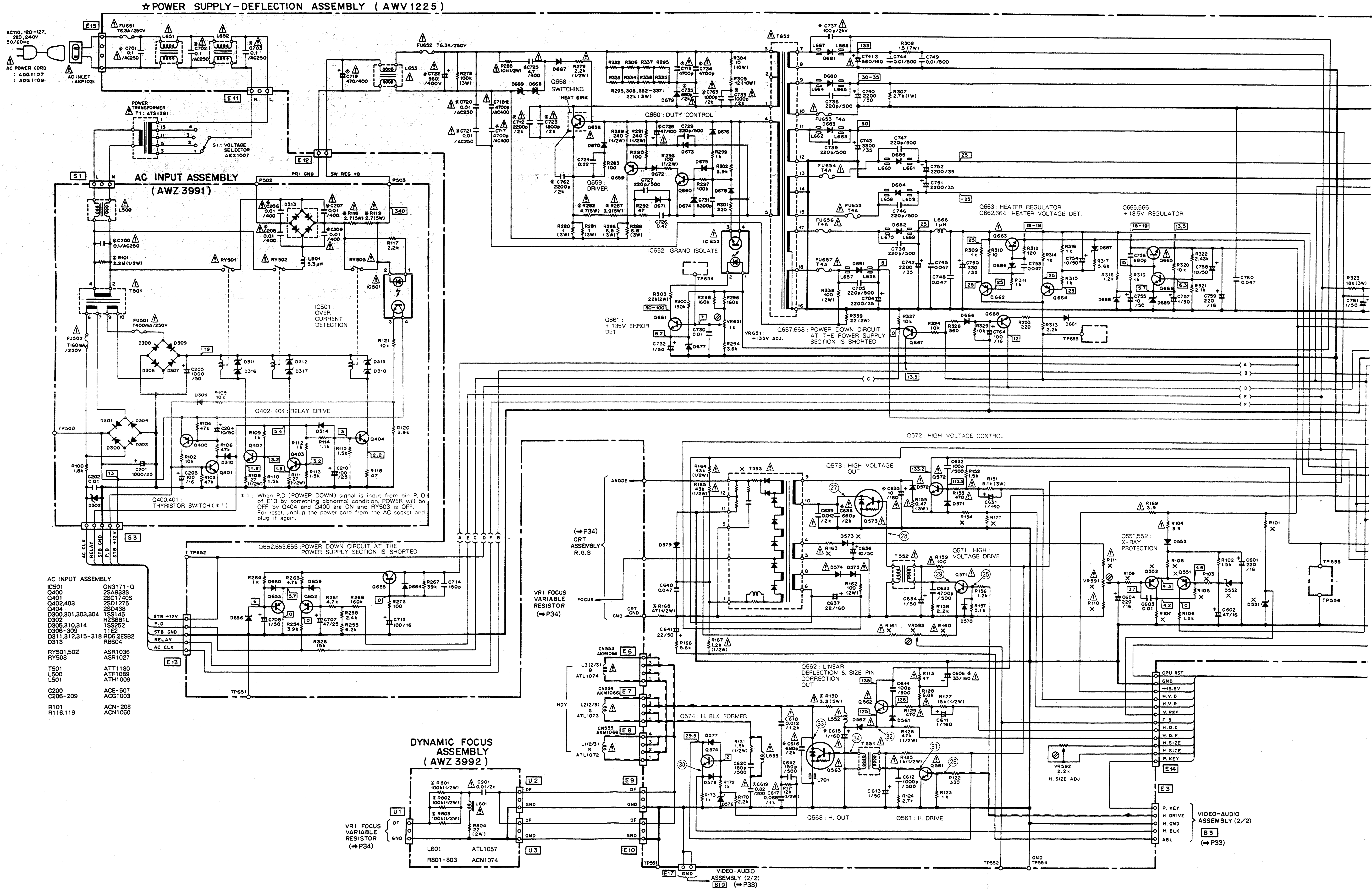
## 5.8 MICROCOMPUTER ASSEMBLY


MICROCOMPUTER ASSEMBLY (AWZ3995)
Q350 : RESET
Q326 : IRREGULAR CONDITION RESET
Q329 : BUFFER
Q331 : RESET
Q339 : OVER CURRENT LIMITER
Q341 : +5.1V REGULATOR
Q343 : OVER CURRENT DET.
IC304 : RESET
IC305 : +9V REGULATOR
Q324 : POWER ON MUTE
Q364 : FOR RESET
Q327 : INVERTER BUFFER
IC303 : REGULATOR
Q342 : INVERTER
IC301 : MICROCOMPUTER
VR301 : TELOP POSITION ADJ
IC307 : NON-VOLATILE MEMORY
Q346 : INVERTER BUFFER
Q308,Q318 : COLOR CONTROL BUFFER
Q307,Q317 : TINT CONTROL BUFFER
Q306,Q316 : CONTRAST CONTROL BUFFER
Q305,Q315 : BRIGHTNESS CONTROL BUFFER
Q310,Q320 : SHARPNESS CONTROL BUFFER
Q309,Q319 : VOLUME CONTROL BUFFER
Q313,Q323 : BASS CONTROL BUFFER
Q312,Q322 : TREBLE CONTROL BUFFER
Q311,Q321 : BALANCE CONTROL BUFFER
Q334,Q337,Q340 : INVERTER
IC302 : CONTROL VOLTAGE PICKUP
Q335,Q336 : BUFFER
Q347,Q353,Q354 : V.BLK PULSE FORMER
Q349,Q355,Q356 : SWITCH (When POWER is OFF, signal is not thru to the TEXT section.)
Q348 : H.BLK PULSE FORMER
IC306 : SYSTEM CONTROL
Q352 : SYSTEM CONTROL
Q333,Q338 : REMOTE CONTROL SIGNAL BUFFER
Q344,Q345 : INVERTER
Q301,Q302 : RH CONVERGENCE CONTROL BUFFER
Q303,Q304 : RV CONVERGENCE CONTROL BUFFER
Q314,Q325 : BH CONVERGENCE CONTROL BUFFER
Q328,Q330 : BV CONVERGENCE CONTROL BUFFER
POWER SUPPLY-DEFLECTION ASSEMBLY E1 (→P41)
VIDEO-AUDIO ASSEMBLY (2/2) B16 (→P31)
VIDEO-AUDIO ASSEMBLY (2/2) B17 (→P31)
VIDEO-AUDIO ASSEMBLY (1/2) B15 (→P23)
TUNER-NICAM ASSEMBLY J13 (→P29)
I/O-TEXT ASSEMBLY K5 K6 (→P21) (→P20)
VIDEO-AUDIO ASSEMBLY (2/2) B18 (→P34)
TUNER-NICAM ASSEMBLY J12 (→P28)
FRONT ASSEMBLY W1 W2 (→P25)
CONVERGENCE ASSEMBLY G3 (→P42)
TUNER-NICAM ASSEMBLY H3 (→P27)
*1: See page 226. MICROCOMPUTER-SUB ASSEMBLY
CN3003
CN3001
CN3004

MICROCOMPUTER ASSEMBLY

| | |
|---|---|
| IC301 | PD5173B9 |
| IC302 | MC14051BCP |
| IC303 | NJM7805FA |
| IC304 | MC34064P |
| IC305 | NJM7809A |
| IC306 | PD0012A |
| IC307 | X24C08P |
| Q301,303,311 – 320,326,<br>Q328,336,343,350,354 | 2SA933S |
| Q302,304 – 310,321 – 325,<br>Q327,329 – 331,333 – 335,<br>Q337 – 340,342,344 – 349,<br>Q352,353,355 | 2SC1740S |
| Q341 | 2SD438 |
| Q356 | 2SJ103 |
| Q360 | RN1203 |
| D301 | RD5.6ESB3 |
| D302 – 312,314 – 317,319,<br>D326 – 330,340 | 1SS252 |
| D318 | RD5.1ESB2 |
| D325 | RD5.1ESB3 |
| VR301 | ACP1041 |
| X201 | ASS1022 |

## 5.9 POWER SUPPLY–DEFLECTION, AC INPUT, DYNAMIC FOCUS, DEFLECTION PROTECT AND HIGH VOLTAGE CONTROL ASSEMBLIES

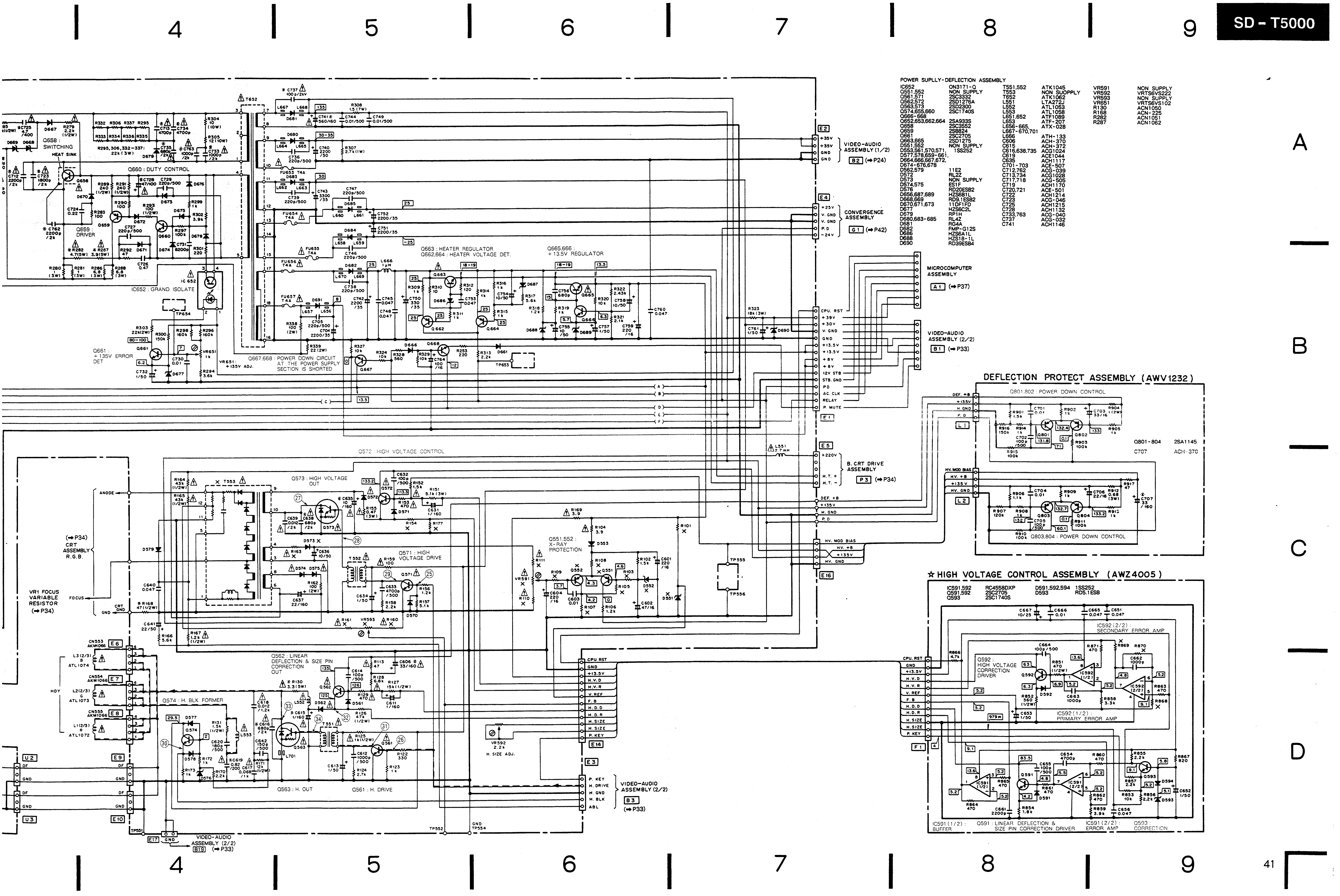


☆POWER SUPPLY-DEFLECTION ASSEMBLY ( AWV1225 )
AC INPUT ASSEMBLY
( AWZ 3991 )
DYNAMIC FOCUS ASSEMBLY
( AWZ 3992 )
AC110, 120-127, 220, 240V 50/60Hz
AC POWER CORD : ADG1107 : ADG1109
AC INLET : AKP1021
POWER TRANSFORMER T1 : ATS1391
S1 : VOLTAGE SELECTOR AKX1007
Q402-404 : RELAY DRIVE
Q400,401 : THYRISTOR SWITCH (＊1)
IC501 : OVER CURRENT DETECTION
Q652,653,655 : POWER DOWN CIRCUIT AT THE POWER SUPPLY SECTION IS SHORTED
Q658 : SWITCHING
Q659 : DRIVER
Q660 : DUTY CONTROL
IC652 : GRAND ISOLATE
Q661 : +135V ERROR DET
VR651 : +135V ADJ.
Q667,668 : POWER DOWN CIRCUIT AT THE POWER SUPPLY SECTION IS SHORTED
Q663 : HEATER REGULATOR
Q662,664 : HEATER VOLTAGE DET.
Q665,666 : +13.5V REGULATOR
Q572 : HIGH VOLTAGE CONTROL
Q573 : HIGH VOLTAGE OUT
Q571 : HIGH VOLTAGE DRIVE
Q551,552 : X-RAY PROTECTION
Q562 : LINEAR DEFLECTION & SIZE PIN CORRECTION OUT
Q574 : H. BLK FORMER
Q563 : H. OUT
Q561 : H. DRIVE
VR592 2.2k H. SIZE ADJ.
CRT ASSEMBLY R.G.B. (➡P34)
VR1 FOCUS VARIABLE RESISTOR (➡P34)
VIDEO-AUDIO ASSEMBLY (2/2) B3 (➡P33)
VIDEO-AUDIO ASSEMBLY (2/2) B19 (➡P33)
HDY
L3(2/3) B ATL1074
L2(2/3) G ATL1073
L1(2/3) R ATL1072
L601 ATL1057
R801-803 ACN1074
CPU RST
GND
+13.5V
H.V.D
H.V.R
V.REF
F.B
H.D.D
H.D.R
H.SIZE
H.SIZE
P.KEY
P. KEY
H. DRIVE
H. GND
H. BLK
ABL
STB +12V
P.D
STB GND
RELAY
AC CLK
ANODE
FOCUS
GND

＊1 : When P.D (POWER DOWN) signal is input from pin P. D of E13 by something abnormal condition, POWER will be OFF by Q404 and Q400 are ON and RY503 is OFF. For reset, unplug the power cord from the AC socket and plug it again.

AC INPUT ASSEMBLY

| | |
|---|---|
| IC501 | ON3171-Q |
| Q400 | 2SA933S |
| Q401 | 2SC1740S |
| Q402,403 | 2SD1275 |
| Q404 | 2SD438 |
| D300,301,303,304 | 1SS145 |
| D302 | HZS6B1L |
| D305,310,314 | 1SS252 |
| D306-309 | 11E2 |
| D311,312,315-318 | RD6.2ESB2 |
| D313 | RB604 |
| RY501,502 | ASR1036 |
| RY503 | ASR1027 |
| T501 | ATT1180 |
| L500 | ATF1089 |
| L501 | ATH1009 |
| C200 | ACE-507 |
| C206-209 | ACG1003 |
| R101 | ACN-208 |
| R116,119 | ACN1060 |


4
5
6
7
8
9
A
B
C
D
Q658 : SWITCHING
HEAT SINK
Q660 : DUTY CONTROL
Q659 : DRIVER
IC652 : GRAND ISOLATE
T652
Q661 : +135V ERROR DET
VR651 : +135V ADJ.
Q667,668 : POWER DOWN CIRCUIT AT THE POWER SUPPLY SECTION IS SHORTED
Q663 : HEATER REGULATOR
Q662,664 : HEATER VOLTAGE DET.
Q665,666 : +13.5V REGULATOR
TP653
TP654
E2
+35V
+35V
GND
GND
VIDEO-AUDIO ASSEMBLY (1/2)
B2 (➡P24)
E4
+25V
V. GND
V. GND
P.D
-24V
CONVERGENCE ASSEMBLY
G1 (➡P42)
MICROCOMPUTER ASSEMBLY
A1 (➡P37)
CPU. RST
+39V
+30V
V. GND
GND
+13.5V
+13.5V
+8V
+8V
12V STB
STB. GND
PD
AC. CLK
RELAY
P. MUTE
E1
VIDEO-AUDIO ASSEMBLY (2/2)
B1 (➡P33)
Q572 : HIGH VOLTAGE CONTROL
Q573 : HIGH VOLTAGE OUT
Q571 : HIGH VOLTAGE DRIVE
T553
T552
L551 2.7mH
E5
+220V
H.T. +
H.T. -
B. CRT DRIVE ASSEMBLY
P3 (➡P34)
DEF. +B
+135V
H. GND
P.D
HV. MOD BIAS
HV. +B
+135V
HV. GND
E16
TP555
TP556
Q551,552 : X-RAY PROTECTION
ANODE
(➡P34) CRT ASSEMBLY R.G.B.
FOCUS
VR1 FOCUS VARIABLE RESISTOR (➡P34)
CRT GND
GND
CN553 AKM1066 E6
L3(2/3) B ATL1074
CN554 AKM1066 E7
L2(2/3) G ATL1073
CN555 AKM1066 E8
L1(2/3) R ATL1072
HDY
Q562 : LINEAR DEFLECTION & SIZE PIN CORRECTION OUT
Q574 : H. BLK FORMER
Q563 : H. OUT
Q561 : H. DRIVE
L701
VR592 2.2k H. SIZE ADJ.
E14
CPU RST
GND
+13.5V
H.V.D
H.V.R
V. REF
F.B
H.D.D
H.D.R
H. SIZE
H. SIZE
P. KEY
E3
P. KEY
H. DRIVE
H. GND
H. BLK
ABL
VIDEO-AUDIO ASSEMBLY (2/2)
B3 (➡P33)
U2
U3
E9
E10
DF
GND
TP551
TP552
GND TP554
E17 GND
VIDEO-AUDIO ASSEMBLY (2/2)
B19 (➡P33)
DEFLECTION PROTECT ASSEMBLY (AWV1232)
Q801,802 : POWER DOWN CONTROL
Q803,804 : POWER DOWN CONTROL
L1
L2
☆HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005)
IC592 (2/2) : SECONDARY ERROR AMP
Q592 : HIGH VOLTAGE CORRECTION DRIVER
IC592 (1/2) : PRIMARY ERROR AMP
F1
IC591 (1/2) : BUFFER
Q591 : LINEAR DEFLECTION & SIZE PIN CORRECTION DRIVER
IC591 (2/2) : ERROR AMP
Q593 : CORRECTION

POWER SUPLLY-DEFLECTION ASSEMBLY

| | |
|---|---|
| IC652 | ON3171-Q |
| Q551,552 | NON SUPPLY |
| Q561,571 | 2SC3332 |
| Q562,572 | 2SD1276A |
| Q563,573 | 2SD2300 |
| Q574,655,660 | 2SC1740S |
| Q666-668 | |
| Q652,653,662,664 | 2SA933S |
| Q658 | 2SC3552 |
| Q659 | 2SB824 |
| Q661 | 2SC2705 |
| Q663,665 | 2SD1275 |
| D551,552 | NON SUPPLY |
| D553,561,570,571, | 1SS252 |
| D577,578,659-661, | |
| D664,666,667,672, | |
| D674-676,678 | |
| D562,579 | 11E2 |
| D572 | RL2Z |
| D573 | NON SUPPLY |
| D574,575 | ES1F |
| D576 | RD20ESB2 |
| D656,687,689 | HZS6B1L |
| D668,669 | RD9.1ESB2 |
| D670,671,673 | 11DF1FD |
| D677 | HZS6C2L |
| D679 | RP1H |
| D680,683-685 | RL4Z |
| D681 | RG4A |
| D682 | FMP-G12S |
| D686 | HZS6A1L |
| D688 | HZS18-1L |
| D690 | RD39ESB4 |

| | |
|---|---|
| T551,552 | ATK1045 |
| T553 | NON SUOPPLY |
| T652 | ATK1062 |
| L551 | LTA272J |
| L552 | ATL1053 |
| L553 | ATL1058 |
| L651,652 | ATF1089 |
| L653 | ATF-207 |
| L656-665, | ATX-028 |
| L667-670,701 | |
| L666 | ATH-133 |
| C606 | ACH-370 |
| C615 | ACH-372 |
| C616,638,735 | ACG1024 |
| C619 | ACE1044 |
| C635 | ACH1117 |
| C701-703 | ACE-507 |
| C712,762 | ACG-039 |
| C713,734 | ACG1028 |
| C717,718 | ACG-505 |
| C719 | ACH1170 |
| C720,721 | ACE-501 |
| C722 | ACH1214 |
| C723 | ACG-046 |
| C725 | ACH1215 |
| C728 | ACH1132 |
| C733,763 | ACG-040 |
| C737 | ACG-032 |
| C741 | ACH1146 |

| | |
|---|---|
| VR591 | NON SUPPLY |
| VR592 | VRTS6VS222 |
| VR593 | NON SUPPLY |
| VR651 | VRTS6VS102 |
| R130 | ACN1050 |
| R168 | ACN-225 |
| R282 | ACN1051 |
| R287 | ACN1062 |

DEFLECTION PROTECT ASSEMBLY (AWV1232)

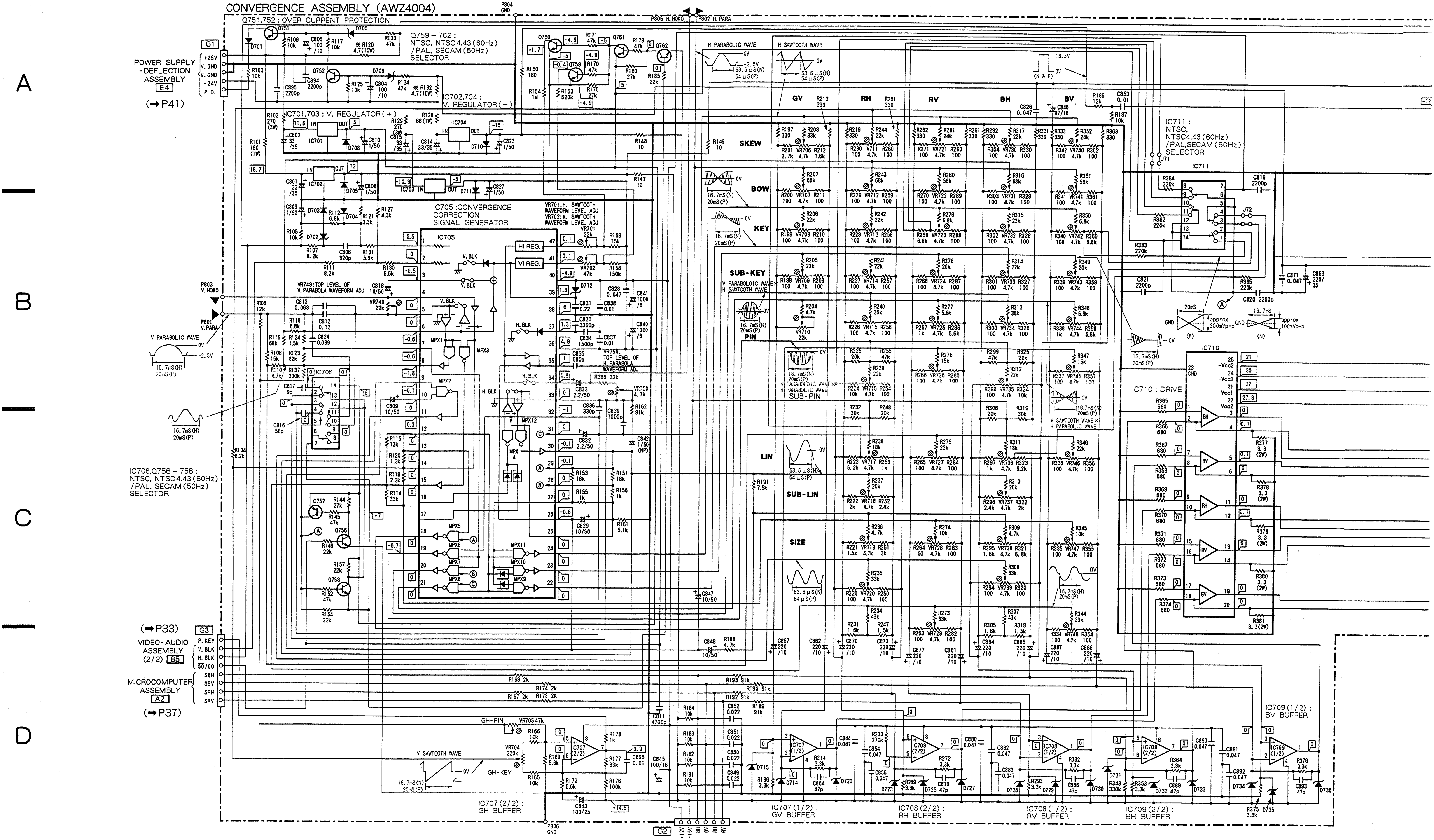
| | |
|---|---|
| Q801-804 | 2SA1145 |
| C707 | ACH-370 |

☆HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005)

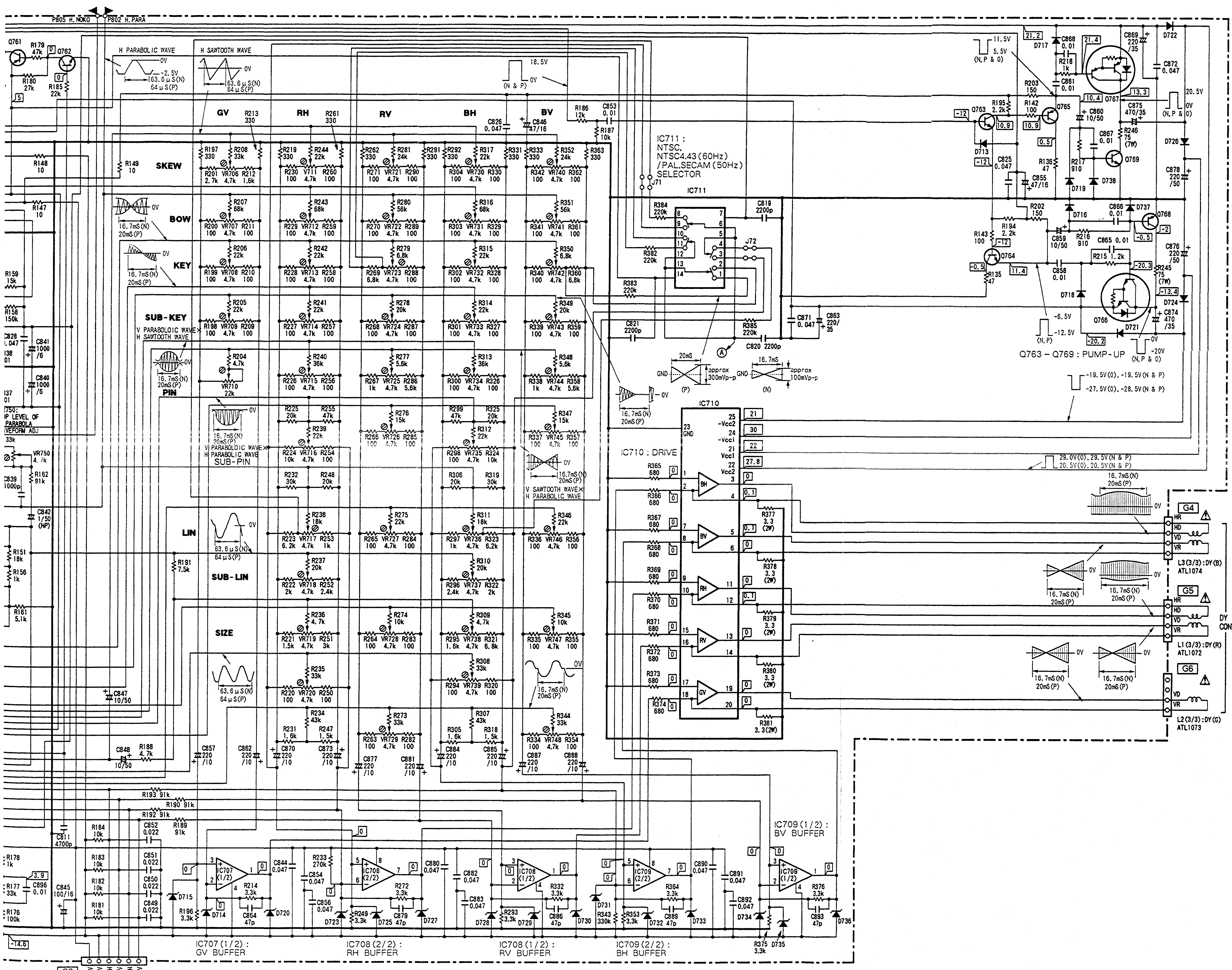
| | | | |
|---|---|---|---|
| IC591,592 | RC4558DXP | D591,592,594 | 1SS252 |
| Q591,592 | 2SC2705 | D593 | RD5.1ESB |
| Q593 | 2SC1740S | | |

1 2 3 4 5 6

## 5.10 CONVERGENCE ASSEMBLY


CONVERGENCE ASSEMBLY (AWZ4004)
Q751,752 : OVER CURRENT PROTECTION
Q759 – 762 : NTSC, NTSC4.43 (60Hz) / PAL, SECAM (50Hz) SELECTOR
POWER SUPPLY - DEFLECTION ASSEMBLY E4
(➡P41)
G1
+25V
V. GND
V. GND
-24V
P. D.
IC701,703 : V. REGULATOR (+)
IC702,704 : V. REGULATOR (−)
IC705 : CONVERGENCE CORRECTION SIGNAL GENERATOR
VR701 : H. SAWTOOTH WAVEFORM LEVEL ADJ
VR702 : V. SAWTOOTH WAVEFORM LEVEL ADJ
VR749 : TOP LEVEL OF V. PARABOLA WAVEFORM ADJ
VR750 : TOP LEVEL OF H. PARABOLA WAVEFORM ADJ
HI REG.
VI REG.
V. BLK
H. BLK
MPX1
MPX2
MPX3
MPX4
MPX5
MPX6
MPX7
MPX8
MPX9
MPX10
MPX11
MPX12
P803 V. NOKO
P801 V. PARA
P804 GND
P805 H. NOKO
P802 H. PARA
V PARABOLIC WAVE
H PARABOLIC WAVE
H SAWTOOTH WAVE
V SAWTOOTH WAVE
16.7mS (N) 20mS (P)
63.6 μS (N) 64 μS (P)
IC706,Q756 – 758 : NTSC, NTSC4.43 (60Hz) / PAL, SECAM (50Hz) SELECTOR
GV
RH
RV
BH
BV
SKEW
BOW
KEY
SUB-KEY
PIN
SUB-PIN
LIN
SUB-LIN
SIZE
V PARABOLIC WAVE × H SAWTOOTH WAVE
V SAWTOOTH WAVE × H PARABOLIC WAVE
IC711 : NTSC, NTSC4.43 (60Hz) / PAL, SECAM (50Hz) SELECTOR
IC710 : DRIVE
approx 300mVp-p
approx 100mVp-p
(➡P33)
G3
VIDEO-AUDIO ASSEMBLY (2/2) B5
P. KEY
V. BLK
H. BLK
50/60
SBH
SBV
SRH
SRV
MICROCOMPUTER ASSEMBLY A2
(➡P37)
GH-PIN
GH-KEY
IC707 (2/2) : GH BUFFER
IC707 (1/2) : GV BUFFER
IC708 (2/2) : RH BUFFER
IC708 (1/2) : RV BUFFER
IC709 (2/2) : BH BUFFER
IC709 (1/2) : BV BUFFER
P806 GND
G2
+12V
-15V
BH
BV
RH
RV
A
B
C
D

1 2 3 4 5 6


P805 H.NOKO
P802 H.PARA
H PARABOLIC WAVE
H SAWTOOTH WAVE
GV
RH
RV
BH
BV
SKEW
BOW
KEY
SUB-KEY
V PARABOLIC WAVE
H SAWTOOTH WAVE
PIN
V PARABOLIC WAVE
H PARABOLIC WAVE
SUB-PIN
LIN
SUB-LIN
SIZE
V SAWTOOTH WAVE
H PARABOLIC WAVE
IC711 : NTSC, NTSC4.43 (60Hz) / PAL,SECAM (50Hz) SELECTOR
IC711
IC710
IC710 : DRIVE
Q763 – Q769 : PUMP-UP
G2
G4
G5
G6
L3 (3/3) : DY (B) ATL1074
L1 (3/3) : DY (R) ATL1072
L2 (3/3) : DY (G) ATL1073
DY CONVERGENCE
IC707 (1/2) : GV BUFFER
IC708 (2/2) : RH BUFFER
IC708 (1/2) : RV BUFFER
IC709 (2/2) : BH BUFFER
IC709 (1/2) : BV BUFFER
4
5
6
7
8
9
A
B
C
D

CONVERGENCE ASSEMBLY

| | |
|---|---|
| IC701 | NJM78M05FAS |
| IC702 | UPC78L12J |
| IC703 | NJM79M05FA |
| IC704 | NJM79L15A |
| IC705 | PA0036 |
| IC706,711 | TC4066BP |
| IC707 – 709 | M5238LF |
| IC710 | STK4277A-SL |
| Q751,757,761,765 | 2SA933S |
| Q752,756,758 – 760,<br>Q762 – 764 | 2SC1740S |
| Q766 | 2SD1276A |
| Q767 | 2SB950A |
| Q768 | 2SA1306 |
| Q769 | 2SC3298 |
| D701,703 – 705,707,<br>D708,710,711,713,<br>D716 – 719,737,738 | 1SS252 |
| D702 | RD8.2ESB |
| D706,709 | RD5.6ESB3 |
| D712 | HZS12BL |
| D714,715,720,723,<br>D725,727 – 736 | UZ-27BSB |
| D721,722 | 11DF2FD |
| D724,726 | 11E2 |

VR701,710,749 : ACP1044
VR702,705 : ACP1045
VR704 : ACP1047
VR706 – 709, VR711 – 748 : ACP1042
VR750 : VRTS6VS472
R245,246 : ACN1084

Note : Marked ( ) which are nearly waveforms are meaned as follows.
- (N) : For NTSC and NTSC 4.43 signal
- (P) : For PAL and SECAM signal
- (0) : For no signal

## The waveformes at each position

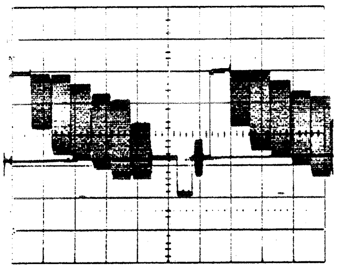
Table 1. H and V values of each system

| | NTSC/NTSC 4.43 | PAL/SECAM |
|---|---|---|
| V (msec) | 16.7 (60Hz) | 20.0 (50Hz) |
| H ( $\mu$sec) | 63.6 (15.75kHz) | 64.0 (15.625kHz) |

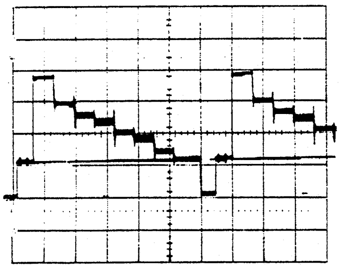
### • Y-C SEPARATION assembly

(1) For PAL color-bar signal input

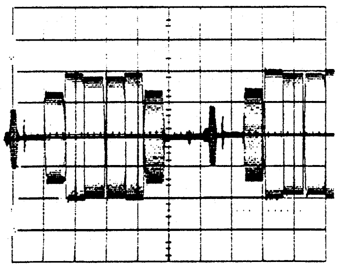
① **CN901 pin COMP IN**
V range : 500mV/div.
H range : 10 $\mu$sec/div.



② **TP-Y OUT (TP-903)**
V range : 500mV/div.
H range : 10 $\mu$sec/div.



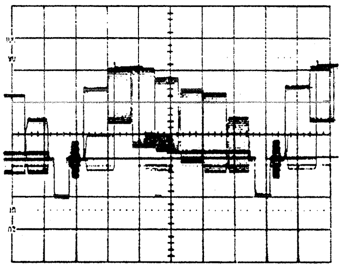
③ **TP-C OUT (TP-904)**
V range : 100mV/div.
H range : 10 $\mu$sec/div.



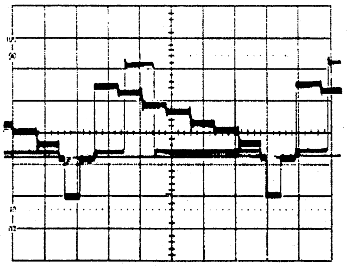
### • VIDEO-AUDIO assembly

(1) For NTSC/NTSC 4.43 color-bar signal input

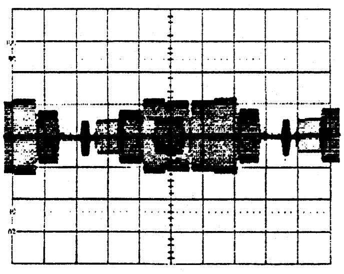
④ **TP-Y/COMP (TP-351)**
V range : 0.5V/div.
H range : 10 $\mu$sec/div.



⑤ **TP-Y (TP-368)**
V range : 0.5V/div.
H range : 10 $\mu$sec/div.

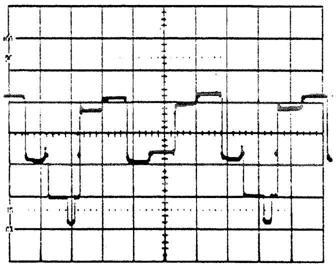


⑥ **TP-C IN (TP-352)**
V range : 0.2V/div.
H range : 10 $\mu$sec/div.

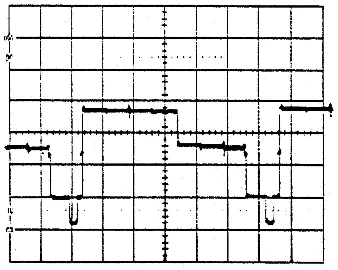


⑦

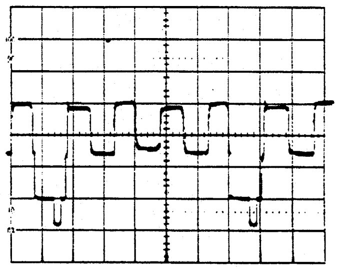
⑧ **TP-R (TP-375)**
V range : 1V/div.
H range : 10 $\mu$sec/div.



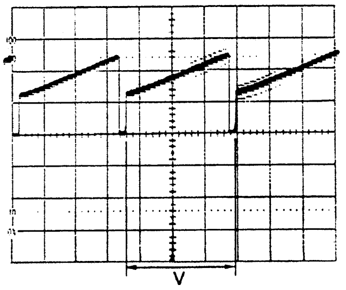
⑨ **TP-G (TP-373)**
V range : 1V/div.
H range : 10 $\mu$sec/div.



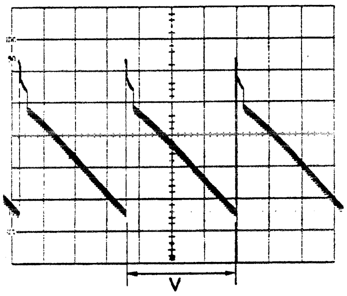
⑩ **TP-B (TP-374)**
V range : 1V/div.
H range : 10 $\mu$sec/div.



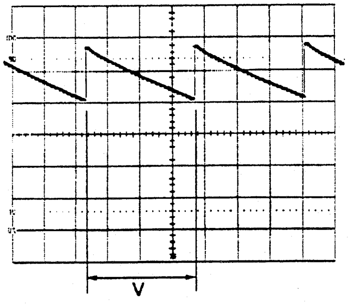
⑪ **TP-V.DRIVE (TP-359)**
V range : 0.5V/div.
H range : 5msec/div.



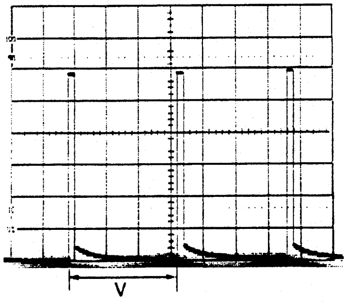
⑫ **TP-V. OUT (TP-360)**
V range : 5V/div.
H range : 5msec/div.



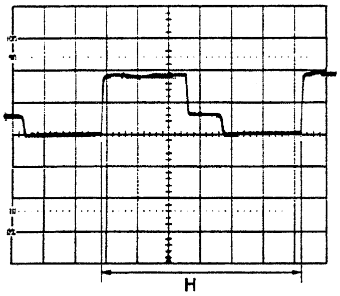
⑬ **TP-V. RAMP (TP-361)**
V range : 1V/div.
H range : 5msec/div.



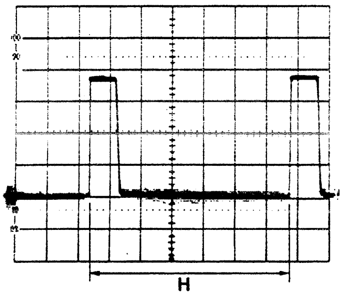
⑭ **TP-V. BLK (TP-354)**
V range : 2V/div.
H range :5msec/div.



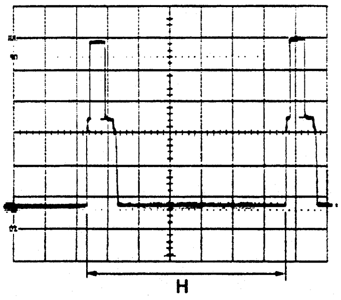
⑮ **TP-H. DRIVE (TP-362)**
V range :1V/div.
H range : 10 µsec/div.



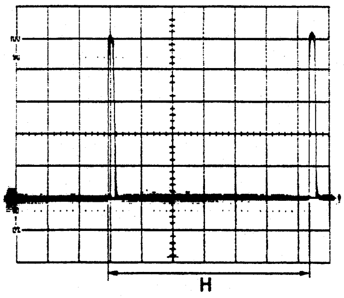
⑯ **Connector B3 , pin H. BLK**
V range : 5V/div.
H range : 10 µsec/div.



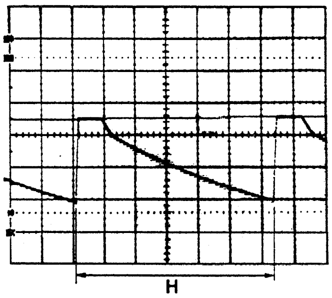
⑰ **TP-S.C (TP-365)**
V range : 2V/div.
H range : 10 µsec/div.



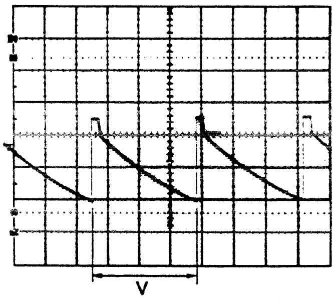
⑱ **TP-C. PULS (TP-363)**
V range : 1V/div.
H range : 10 µsec/div.



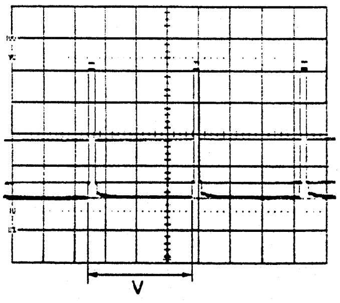
⑲ **IC353 pin 6 (HTC)**
V range : 2V/div.
H range : 10 µsec/div.



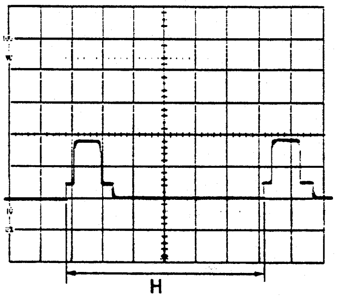
⑳ **IC353 pin 5 (VTC)**
V range : 2V/div.
H range : 5msec/div.



㉑-1 **TP-C. BLK (TP-366)**
V range : 2V/div.
H range : 5msec/div.

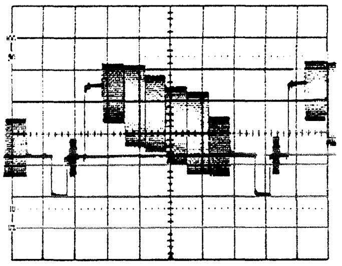


㉑-2 **TP-C. BLK (TP-366)**
V range :2V/div.
H range : 10 µsec/div.

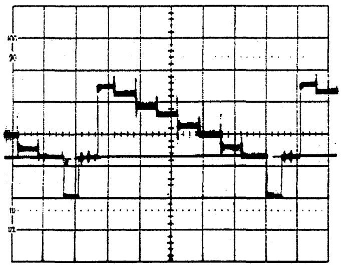


(2) For PAL color-bar signal input

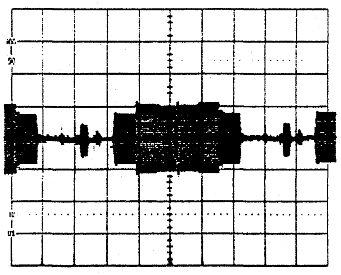
**④ TP-Y/COMP (TP-351)**
V range : 0.5V/div.
H range : 10 μsec/div.



**⑤ TP-Y (TP-368)**
V range : 0.5V/div.
H range : 10 μsec/div.

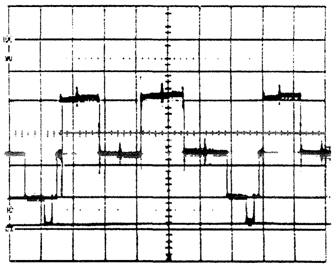


**⑥ TP-C IN (TP-352)**
V range : 0.2V/div.
H range : 10 μsec/div.

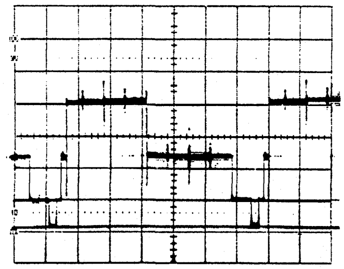


⑦

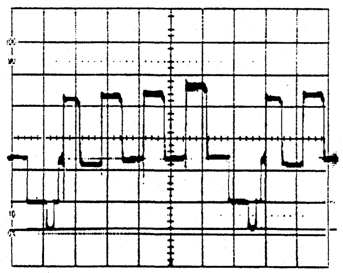
**⑧ TP-R (TP-375)**
V range : 1V/div.
H range : 10 μsec/div.



**⑨ TP-G (TP-(373)**
V range : 1V/div.
H range : 10 μsec/div.



**⑩ TP-B (TP-374)**
V range : 1V/div.
H range : 10 μsec/div.



**⑪—⑭**

- The waveforms ⑪ to⑭ are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the V value which is different as shown in Table 1.

**⑮—⑲**

- The waveforms ⑮ to⑲ are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the H value which is different as shown in Table 1.

**⑳ , ㉑–1**

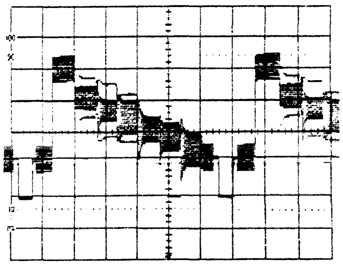
- The waveforms ⑳ to ㉑–1 are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the V value which is different as shown in Table 1.

**㉑– 2**

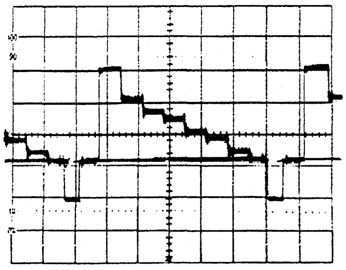
- The waveforms ㉑ –2 are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the H value which is different as shown in Table 1.

(3) For SECAM color-bar signal input

④ **TP-Y/COMP (TP-351)**
V range : 0.5V/div.
H range : 10 $\mu$sec/div.

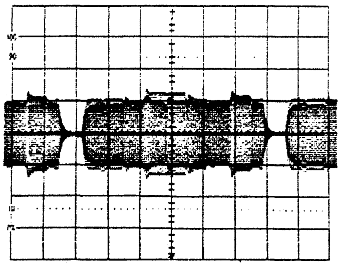


⑤ **TP-Y(TP-368)**
V range : 0.5V/div.
H range : 10 $\mu$sec/div.

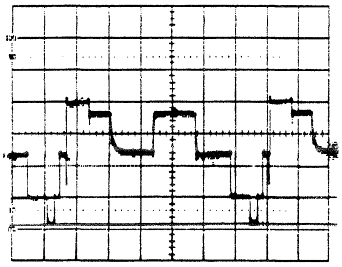


⑥

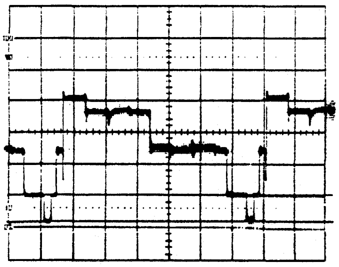
⑦ **IC356 pin 18 (SECAM IN)**
V range : 0.2V/div.
H range : 10 $\mu$sec/div.



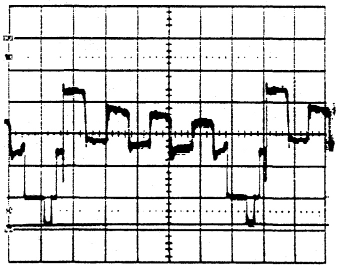
⑧ **TP-R (TP-375)**
V range : 1V/div.
H range : 10 $\mu$sec/div.



⑨ **TP-G (TP-373)**
V range : 1V/div.
H range : 10 $\mu$sec/div.



⑩ **TP-B (TP-374)**
V range : 1V/div.
H range : 10 $\mu$sec/div.



⑪—⑭

- The waveforms ⑪ to ⑭ are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the V value which is different as shown in Table 1.

⑮—⑲

- The waveforms ⑮ to ⑲ are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the H value which is different as shown in Table 1.

⑳, ㉑−1

- The waveforms ⑳ to ㉑−1 are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the V value which is different as shown in Table 1.

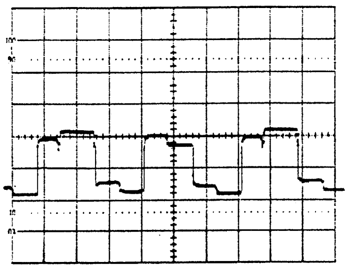
㉑− 2

- The waveforms ㉑ −2 are the same as those obtained with an NTSC/NTSC4.43 color bar signal input (page 46), except the H value which is different as shown in Table 1.

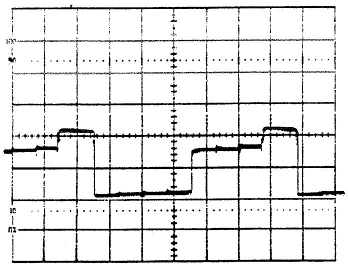
- **R CRT assembly, G CRT assembly, B CRT assemly**

(1) For NTSC/NTSC 4.43 color-bar signal input

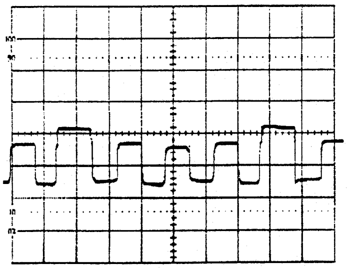
㉒ **R-cathode**
V range : 50V/div.
H range : 10 $\mu$sec/div.



㉓ **G-cathode**
V range : 50V/div.
H range : 10 $\mu$sec/div.

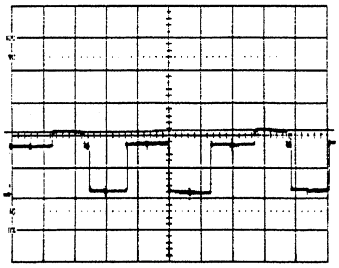


㉔ **B-cathode**
V range : 50V/div.
H range : 10 $\mu$sec/div.

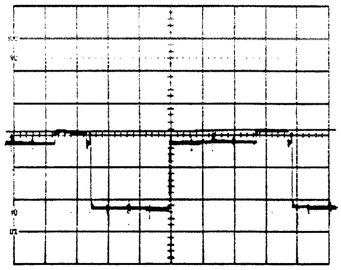


(2) For PAL color-bar signal input

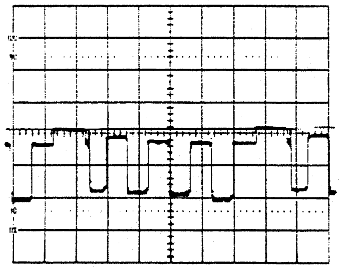
㉒ **R-cathode**
V range : 50V/div.
H range : 10 $\mu$sec/div.



㉓ **G-cathode**
V range : 50V/div.
H range : 10 $\mu$sec/div.

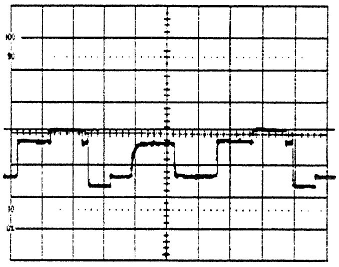


㉔ **B-cathode**
V range : 50V/div.
H range : 10 $\mu$sec/div.

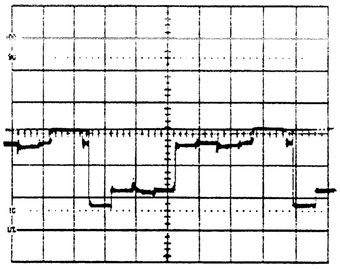


(3) For SECAM color-bar signal input

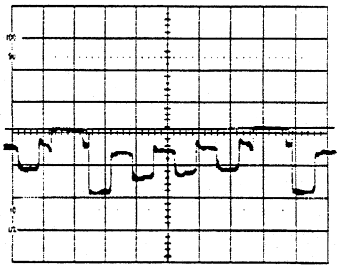
㉒ **R-cathode**
V range : 50V/div.
H range : 10 $\mu$sec/div.



㉓ **G-cathode**
V range : 50V/div.
H range : 10 $\mu$sec/div.



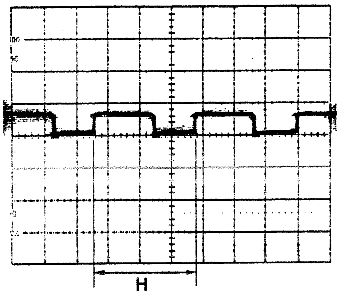
㉔ **B-cathode**
V range : 50V/div.
H range : 10 $\mu$sec/div.



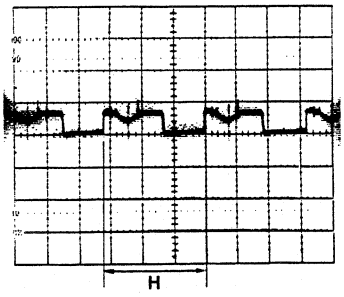
## • POWER SUPPLY-DEFLECTION assembly

- The waveforms ㉕ to ㉞ are input for the PAL color-bar signal.
  These waveforms are the same as those obtained with an NTSC/NTSC4.43 color bar signal input, except the V and H values which are different as shown in Table 1.

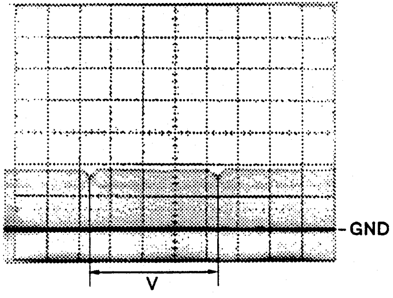
㉕ **Q571 base**
V range : 1V/div.
H range : 20 $\mu$sec/div.



㉖ **Q561 base**
V range : 1V/div.
H range : 20 $\mu$sec/div.

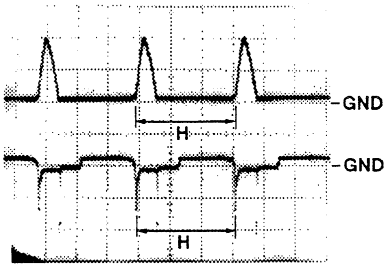


㉗ **Q573 collector**
V range : 500V/div.
H range : 5msec/div.

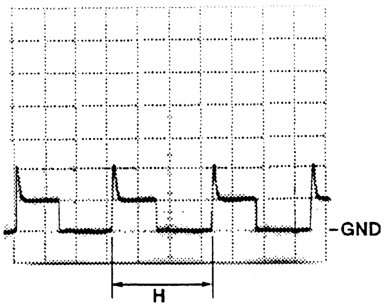


㉗ **Upper : Q573 collector**
V range : 500V/div.
H range : 20 $\mu$sec/div.

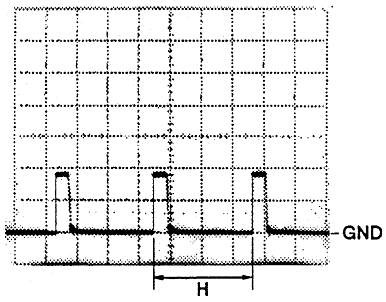
㉘ **Lower : Q573 base**
V range : 5V/div.
H range : 20 $\mu$sec/div.



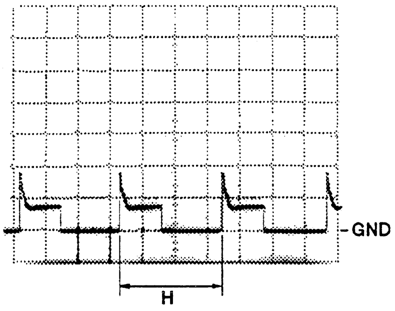
㉙ **Q571 collector**
V range : 50V/div.
H range : 20 $\mu$sec/div.



㉚ **Q574 emitter**
V range : 10V/div.
H range : 20 $\mu$sec/div.

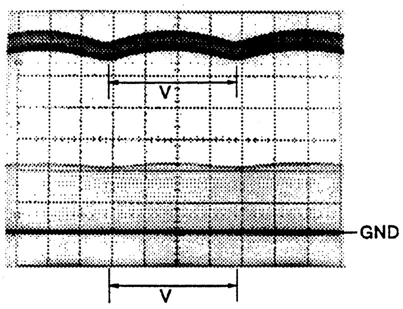


㉛ **Q561 collector**
V range : 50V/div.
H range : 20 $\mu$sec/div.



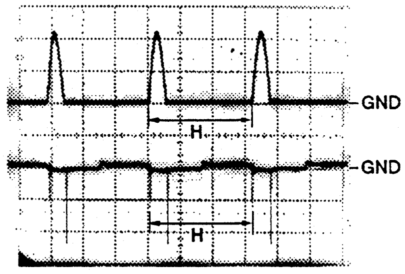
㉜ **Upper : Q562 emitter**
V range : 20V/div.
H range : 5msec/div.

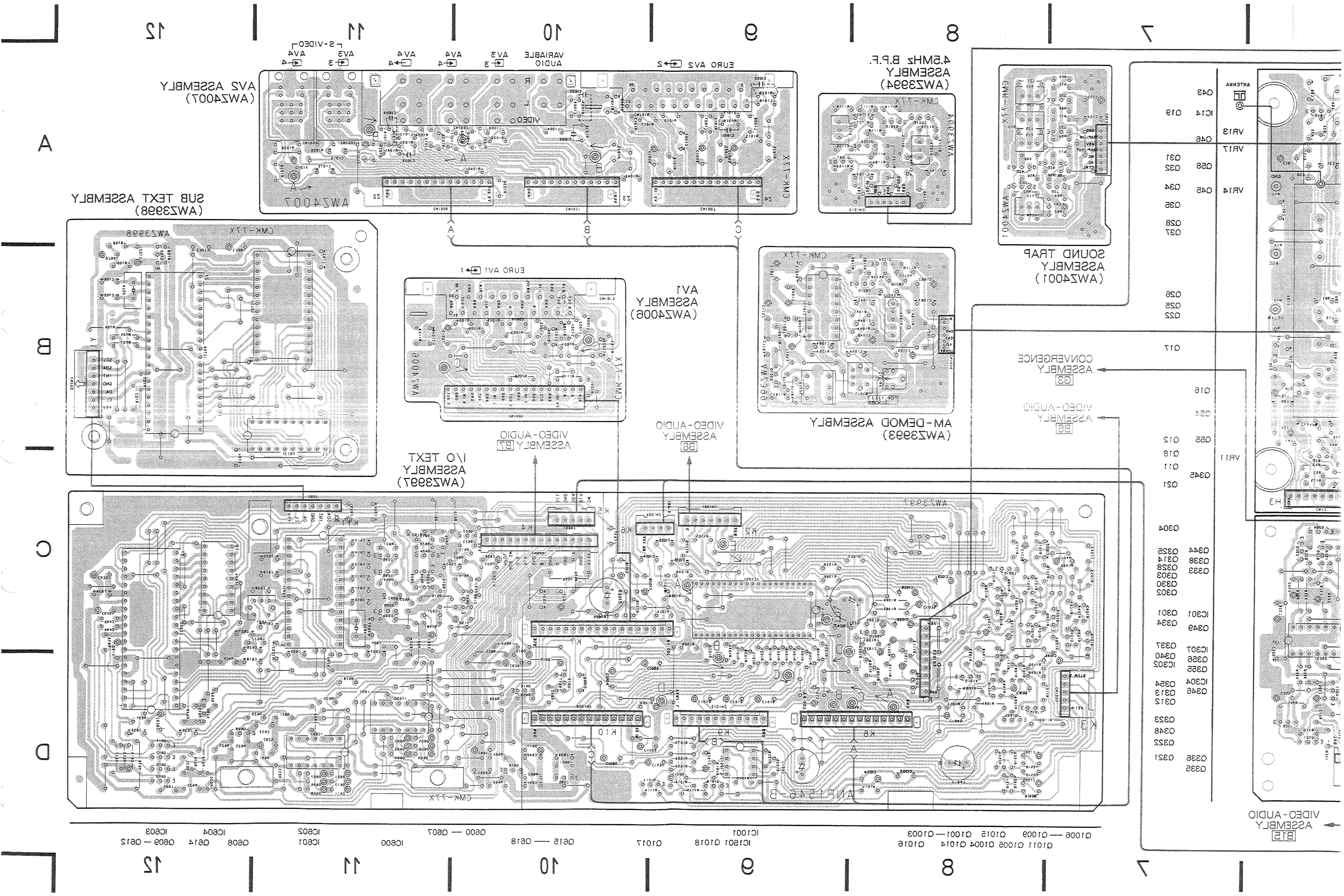
㉝ **Lower : Q563 collector**
V range : 500V/div.
H range : 5msec/div.



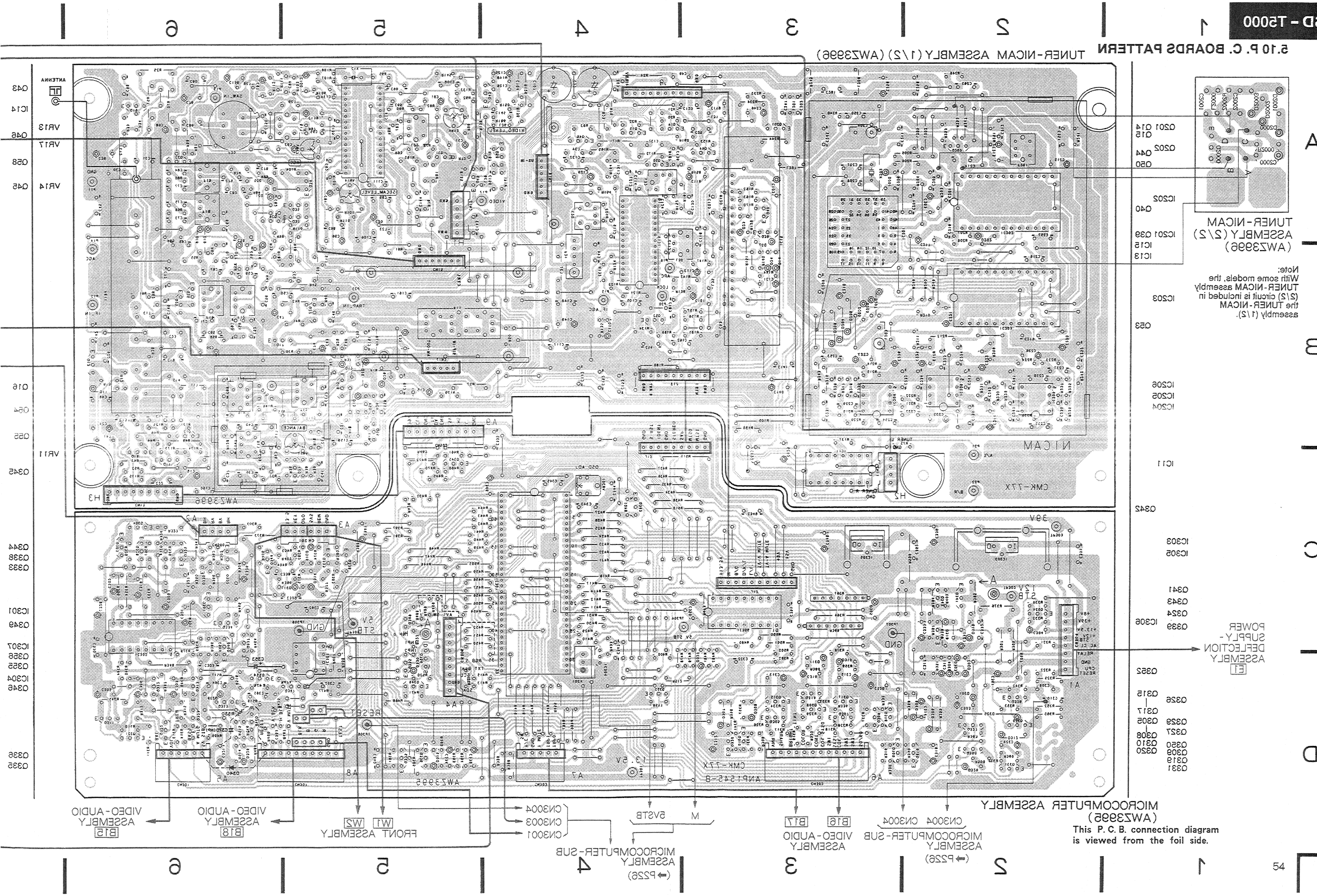
㉝ **Upper : Q563 collector**
V range : 500V/div.
H range : 20 $\mu$sec/div.

㉞ **Lower : Q563 base**
V range : 10V/div.
H range : 20 $\mu$sec/div.




12
11
10
9
8
7
A
B
C
D
AV2 ASSEMBLY
(AWZ4007)
S-VIDEO
AV4
AV3
VARIABLE AUDIO
EURO AV2
4.5MHz B.P.F. ASSEMBLY
(AWZ3994)
SOUND TRAP ASSEMBLY
(AWZ4001)
ANTENNA
SUB TEXT ASSEMBLY
(AWZ3998)
AV1 ASSEMBLY
(AWZ4006)
EURO AV1
AM-DEMOD ASSEMBLY
(AWZ3993)
CONVERGENCE ASSEMBLY
G3
VIDEO-AUDIO ASSEMBLY
B6
VIDEO-AUDIO ASSEMBLY
B7
VIDEO-AUDIO ASSEMBLY
B8
I/O TEXT ASSEMBLY
(AWZ3997)
VIDEO-AUDIO ASSEMBLY
B15
Q43 IC14 Q19
Q46 VR13 VR17
Q31 Q32 Q58
Q34 Q45 VR14
Q35
Q28 Q37
Q26 Q25 Q22
Q17
Q16
Q54
Q12 Q55
Q18 Q11 Q345 VR11
Q21
Q304
Q325 Q314 Q328 Q303 Q330 Q302
Q344 Q338 Q333
Q301 Q334
IC301 Q349
Q337 Q340 IC302
IC307 Q356 Q355
Q354 Q313 Q312
IC304 Q346
Q323 Q348 Q322
Q321
Q336 Q335
IC603 Q609 — Q612
IC604 Q614 Q608
IC602 IC601
IC600
Q600 — Q607
Q615 — Q618
IC1001 IC1501 Q1018
Q1017
Q1006 — Q1009 Q1015 Q1001 — Q1003
Q1011 Q1005 Q1004 Q1014 Q1016

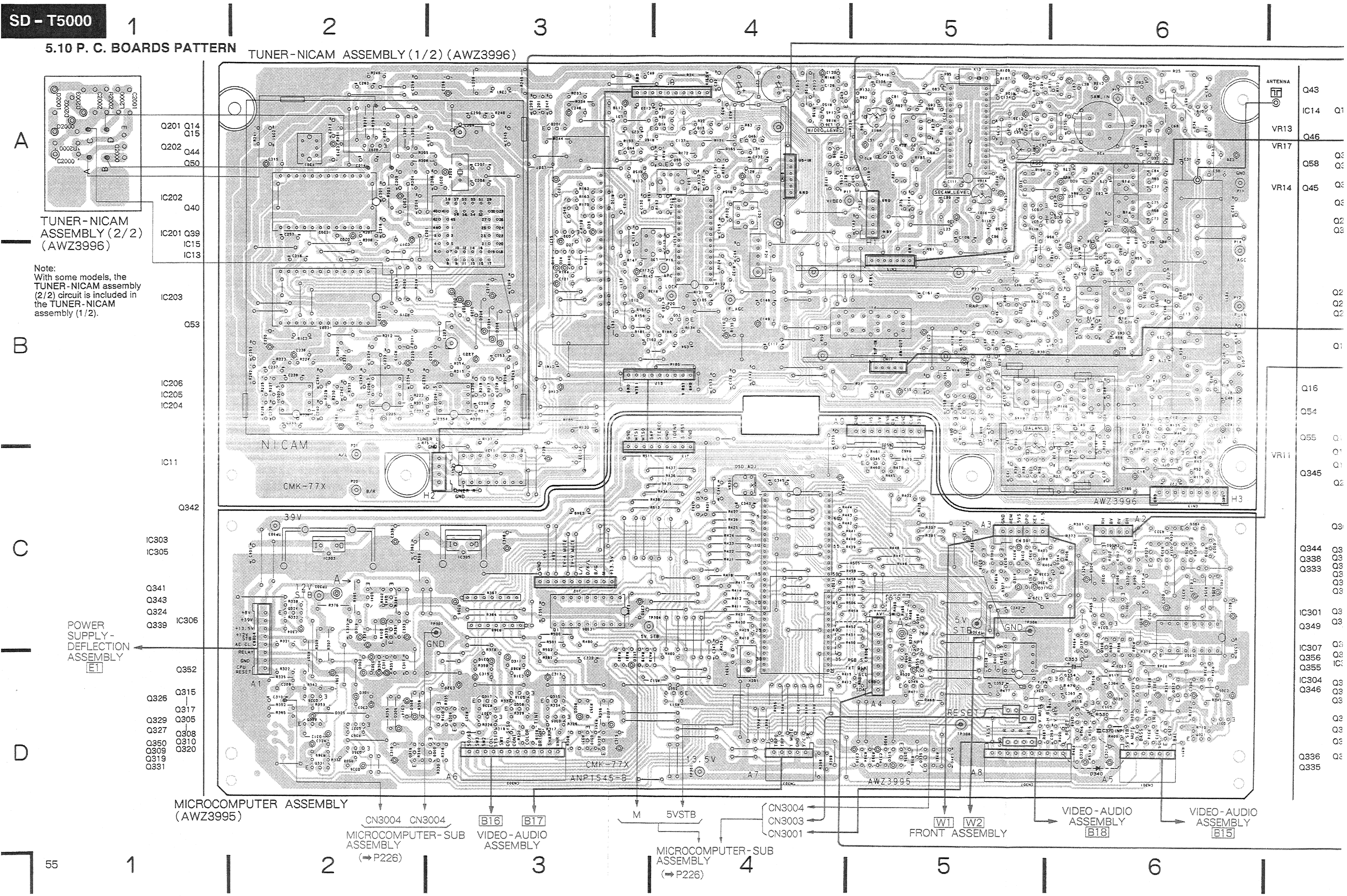
## 5.10 P. C. BOARDS PATTERN


6
5
4
3
2
1
A
B
C
D
TUNER-NICAM ASSEMBLY (1/2) (AWZ3996)
TUNER-NICAM ASSEMBLY (2/2) (AWZ3996)
ANTENNA
Q43
IC14
VR13
Q46
VR17
Q58
VR14
Q45
Q16
Q54
Q55
VR11
Q345
Q201 Q14
Q15
Q202
Q44
Q50
IC202
Q40
IC201 Q39
IC15
IC13
IC203
Q53
IC206
IC205
IC204
IC11
Q342
NICAM
CMK-77X
AWZ3996
H2
H3
Q344
Q338
Q333
IC301
Q349
IC307
Q356
Q355
IC304
Q346
Q336
Q335
IC303
IC305
Q341
Q343
Q324
Q339
IC306
Q352
Q315
Q317
Q305
Q308
Q310
Q320
Q326
Q329
Q327
Q330
Q309
Q319
Q331
39V
12V STB
5V STB
GND
RESET
13.5V
AWZ3995
CMK-77X
ANP1545-B
A1
A3
A4
A5
A6
A7
A8
A9
POWER SUPPLY-DEFLECTION ASSEMBLY
E1
MICROCOMPUTER ASSEMBLY (AWZ3995)
VIDEO-AUDIO ASSEMBLY
B15
VIDEO-AUDIO ASSEMBLY
B18
W2
W1
FRONT ASSEMBLY
CN3004
CN3003
CN3001
MICROCOMPUTER-SUB ASSEMBLY
(⇒ P226)
M
5VSTB
B17
B16
VIDEO-AUDIO ASSEMBLY
CN3004 CN3004
MICROCOMPUTER-SUB ASSEMBLY
(⇒ P226)

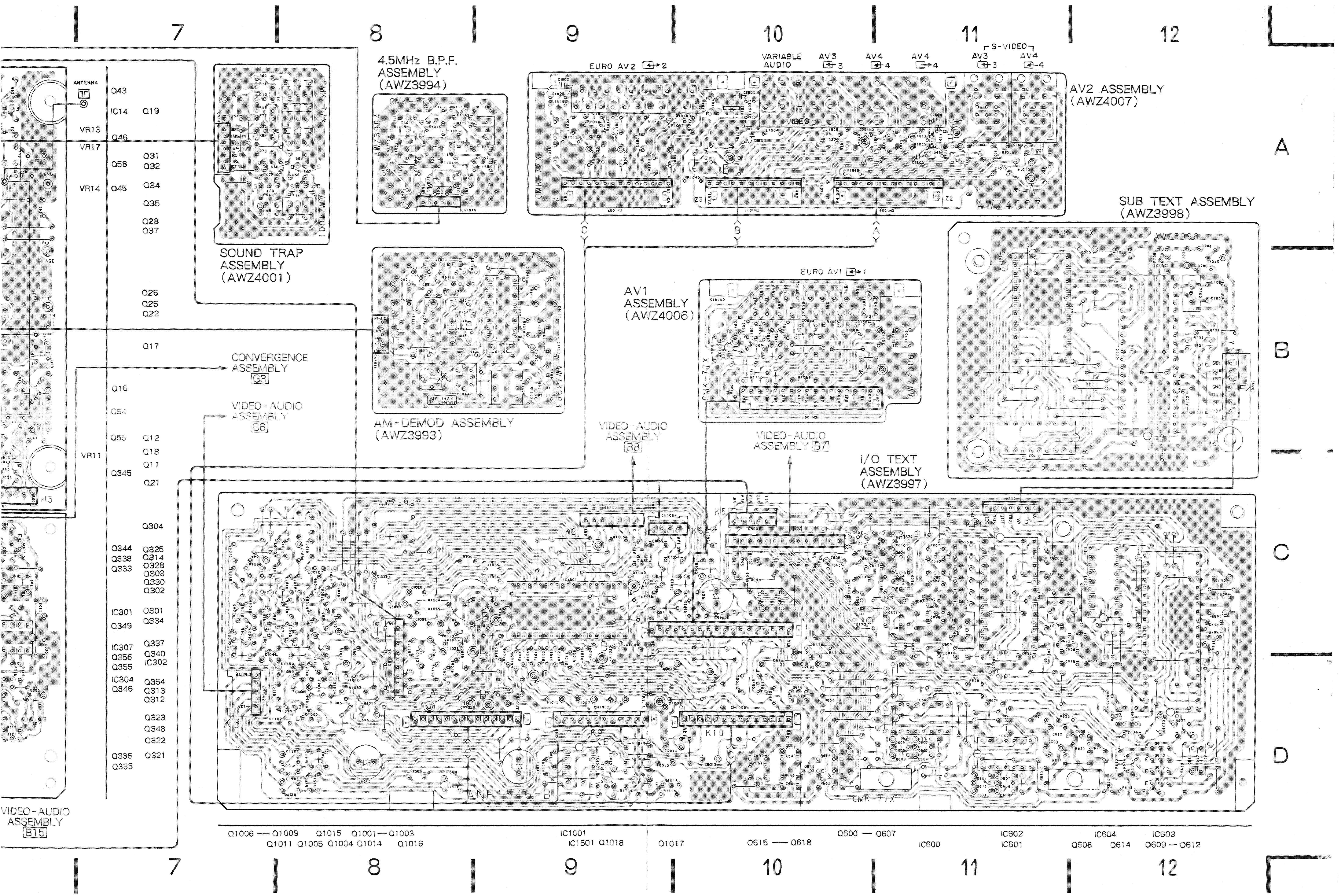
Note:
With some models, the TUNER-NICAM assembly (2/2) circuit is included in the TUNER-NICAM assembly (1/2).

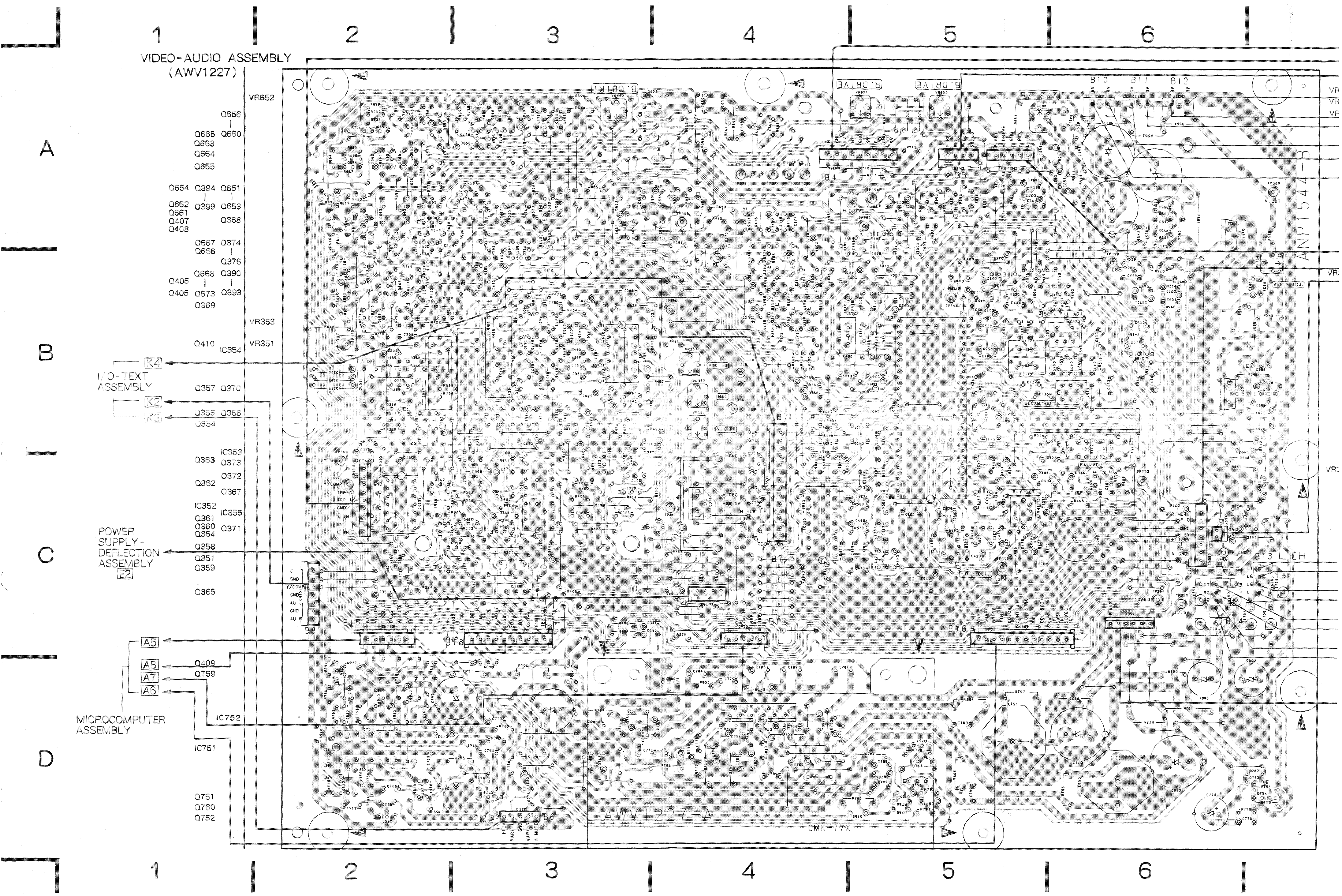
This P. C. B. connection diagram is viewed from the foil side.

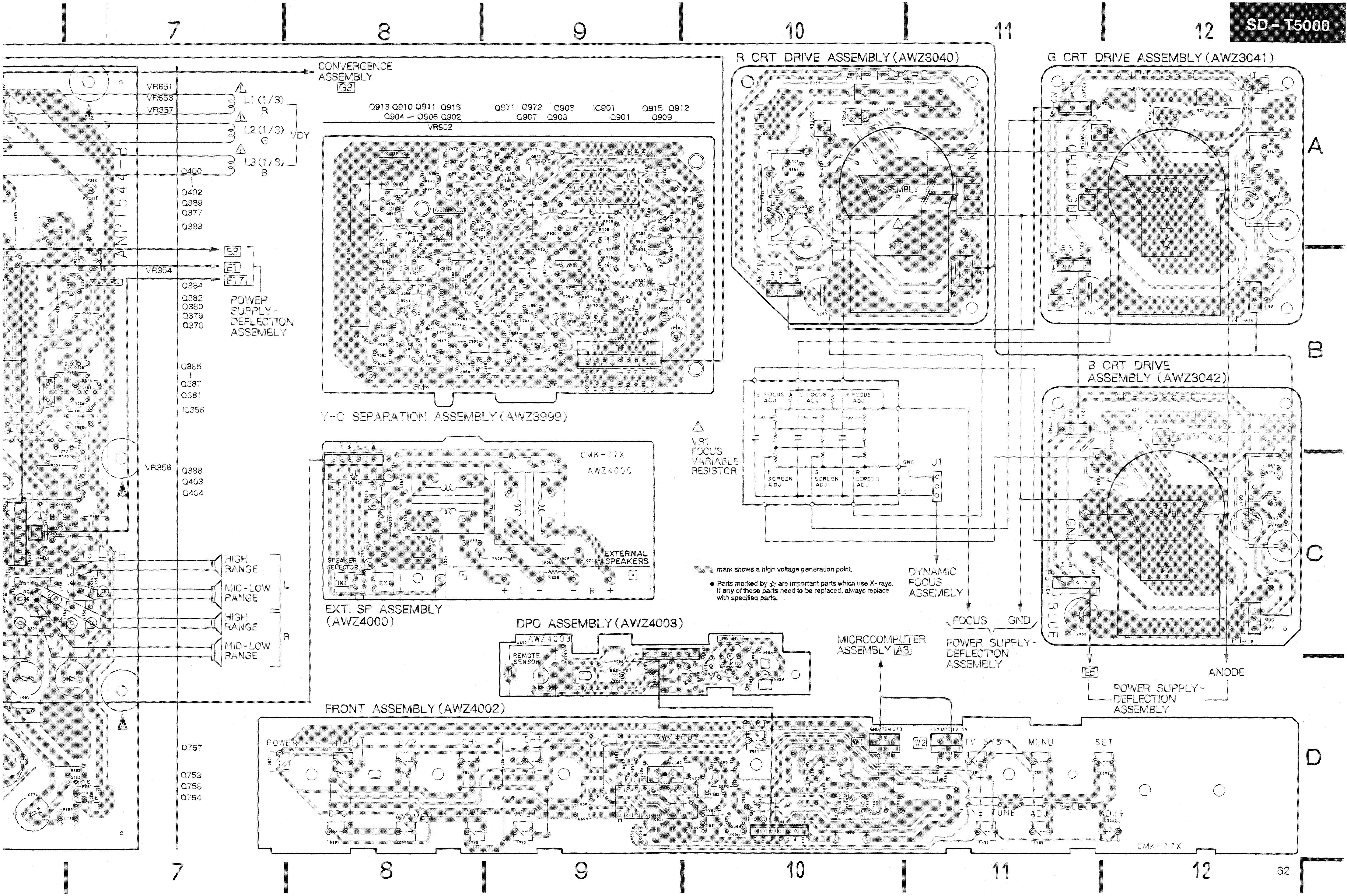
## 5.10 P. C. BOARDS PATTERN


1
2
3
4
5
6
A
B
C
D
TUNER-NICAM ASSEMBLY (1/2) (AWZ3996)
TUNER-NICAM ASSEMBLY (2/2) (AWZ3996)
NICAM
CMK-77X
AWZ3996
H2
H3
ANTENNA
VIDEO LEVEL
SECAM LEVEL
BALANCE
OSD ADJ
39V
12V STB
5V STB
13.5V
GND
RESET
A1
A2
A3
A4
A5
A6
A7
A8
CMK-77X
ANP1545-B
AWZ3995
MICROCOMPUTER ASSEMBLY (AWZ3995)
POWER SUPPLY-DEFLECTION ASSEMBLY
E1
CN3004
CN3004
MICROCOMPUTER-SUB ASSEMBLY
(➡P226)
B16
B17
VIDEO-AUDIO ASSEMBLY
M
5VSTB
CN3004
CN3003
CN3001
MICROCOMPUTER-SUB ASSEMBLY
(➡P226)
W1
W2
FRONT ASSEMBLY
VIDEO-AUDIO ASSEMBLY
B18
VIDEO-AUDIO ASSEMBLY
B15
Q201 Q14
Q15
Q202 Q44
Q50
IC202
Q40
IC201 Q39
IC15
IC13
IC203
Q53
IC206
IC205
IC204
IC11
Q342
IC303
IC305
Q341
Q343
Q324
Q339
IC306
Q352
Q326
Q315
Q317
Q329
Q305
Q327
Q308
Q350
Q310
Q309
Q320
Q319
Q331
Q43
IC14
VR13
Q46
VR17
Q58
VR14
Q45
Q16
Q54
Q55
VR11
Q345
Q344
Q338
Q333
IC301
Q349
IC307
Q356
Q355
IC304
Q346
Q336
Q335

Note:
With some models, the **TUNER-NICAM** assembly (2/2) circuit is included in the **TUNER-NICAM** assembly (1/2).

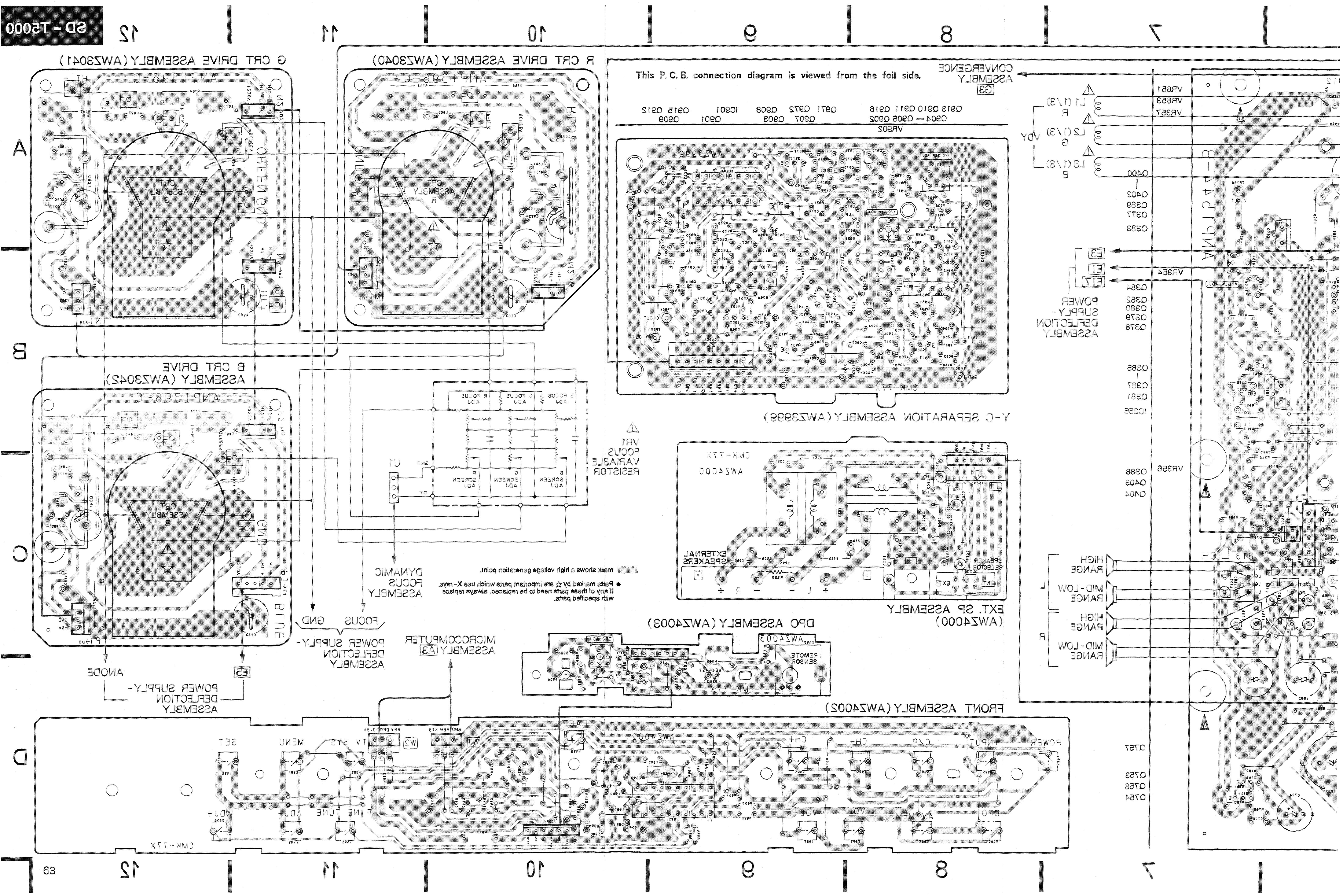

7
8
9
10
11
12
A
B
C
D
4.5MHz B.P.F. ASSEMBLY (AWZ3994)
SOUND TRAP ASSEMBLY (AWZ4001)
AM-DEMOD ASSEMBLY (AWZ3993)
AV2 ASSEMBLY (AWZ4007)
AV1 ASSEMBLY (AWZ4006)
SUB TEXT ASSEMBLY (AWZ3998)
I/O TEXT ASSEMBLY (AWZ3997)
EURO AV2 ⇦2
EURO AV1 ⇦1
VARIABLE AUDIO
AV3 ⇦3
AV4 ⇦4
AV4 ⇨4
S-VIDEO
AV3 ⇦3
AV4 ⇦4
CONVERGENCE ASSEMBLY G3
VIDEO-AUDIO ASSEMBLY B6
VIDEO-AUDIO ASSEMBLY B8
VIDEO-AUDIO ASSEMBLY B7
VIDEO-AUDIO ASSEMBLY B15
ANTENNA
CMK-77X
AWZ3994
AWZ4001
AWZ3993
AWZ4007
AWZ4006
AWZ3998
AW73997
ANP1546-B
A
B
C
D
E
K1
K2
K3
K4
K5
K6
K7
K8
K9
K10
Z2
Z3
Z4
H3
VIDEO
R
L
Q43
IC14
Q19
VR13
Q46
VR17
Q31
Q58
Q32
VR14
Q45
Q34
Q35
Q28
Q37
Q26
Q25
Q22
Q17
Q16
Q54
Q55
Q12
Q18
VR11
Q11
Q345
Q21
Q304
Q344
Q325
Q338
Q314
Q333
Q328
Q303
Q330
Q302
IC301
Q301
Q349
Q334
IC307
Q337
Q356
Q340
Q355
IC302
IC304
Q354
Q346
Q313
Q312
Q323
Q348
Q322
Q336
Q321
Q335
Q1006 — Q1009
Q1015
Q1001 — Q1003
Q1011
Q1005
Q1004
Q1014
Q1016
IC1001
IC1501
Q1018
Q1017
Q615 — Q618
Q600 — Q607
IC600
IC602
IC601
IC604
Q608
Q614
IC603
Q609 — Q612


1
2
3
4
5
6
A
B
C
D
VIDEO-AUDIO ASSEMBLY
(AWV1227)
VR652
Q656
Q665
Q660
Q663
Q664
Q655
Q654
Q394
Q651
Q653
Q662
Q399
Q661
Q407
Q368
Q408
Q667
Q374
Q666
Q376
Q668
Q390
Q406
Q405
Q673
Q393
Q369
VR353
Q410
IC354
VR351
I/O-TEXT ASSEMBLY
K4
K2
K3
Q357
Q370
Q356
Q366
Q354
IC353
Q363
Q373
Q372
Q362
Q367
IC352
IC355
Q361
Q360
Q371
Q364
Q358
Q351
Q359
Q365
POWER SUPPLY-DEFLECTION ASSEMBLY
E2
A5
A8
A7
A6
Q409
Q759
IC752
MICROCOMPUTER ASSEMBLY
IC751
Q751
Q760
Q752
B4
B5
B3
B2
B6
B7
B8
B10
B11
B12
B13 L CH
B14
B15
B16
B17
B19
R CH
R.DRIVE
B.DRIVE
V.SIZE
B.OBIKI
12V
V.BLK ADJ
BELL FIL.ADJ
SECAM REF.
PAL ADJ
B-Y DET.
R-Y DET.
C.IN
50/60
13.5V
GND
V.OUT
H.DRIVE
ANP1544-B
AWV1227-A
CMK-77X


7
8
9
10
11
12
CONVERGENCE ASSEMBLY G3
VR651
VR653
VR357
L1 (1/3) R
L2 (1/3) G
L3 (1/3) B
VDY
ANP1544-B
Q400
Q402
Q389
Q377
Q383
E3
E1
E17
VR354
Q384
Q382
Q380
Q379
Q378
POWER SUPPLY-DEFLECTION ASSEMBLY
Q385
Q387
Q381
IC356
VR356
Q388
Q403
Q404
B19
B13
L CH
R CH
B14
HIGH RANGE
MID-LOW RANGE
L
R
Q757
Q753
Q758
Q754
Q913 Q910 Q911 Q916
Q904 — Q906 Q902
VR902
Q971 Q972 Q908
Q907 Q903
IC901
Q901
Q915 Q912
Q909
AWZ3999
CMK-77X
Y-C SEPARATION ASSEMBLY (AWZ3999)
AWZ4000
SPEAKER SELECTOR
INT
EXT
EXTERNAL SPEAKERS
+ L − − R +
EXT. SP ASSEMBLY (AWZ4000)
DPO ASSEMBLY (AWZ4003)
AWZ4003
REMOTE SENSOR
DPO ADJ
R CRT DRIVE ASSEMBLY (AWZ3040)
ANP1396-C
RED
SCREEN
CRT ASSEMBLY R
GND
M2
M1
G CRT DRIVE ASSEMBLY (AWZ3041)
GREEN
CRT ASSEMBLY G
N2
N1
HT
+9V
B CRT DRIVE ASSEMBLY (AWZ3042)
CRT ASSEMBLY B
BLUE
P2
P3
P1
VR1 FOCUS VARIABLE RESISTOR
B FOCUS ADJ
G FOCUS ADJ
R FOCUS ADJ
B SCREEN ADJ
G SCREEN ADJ
R SCREEN ADJ
GND
DF
U1
DYNAMIC FOCUS ASSEMBLY
FOCUS
GND
POWER SUPPLY-DEFLECTION ASSEMBLY
E5
ANODE
POWER SUPPLY-DEFLECTION ASSEMBLY
MICROCOMPUTER ASSEMBLY A3
FRONT ASSEMBLY (AWZ4002)
AWZ4002
POWER
INPUT
C/P
CH−
CH+
FACT
W1
W2
TV SYS
MENU
SET
DPO
AV/PMEM.
VOL−
VOL+
FINE TUNE
ADJ−
SELECT
ADJ+
A
B
C
D

mark shows a high voltage generation point.

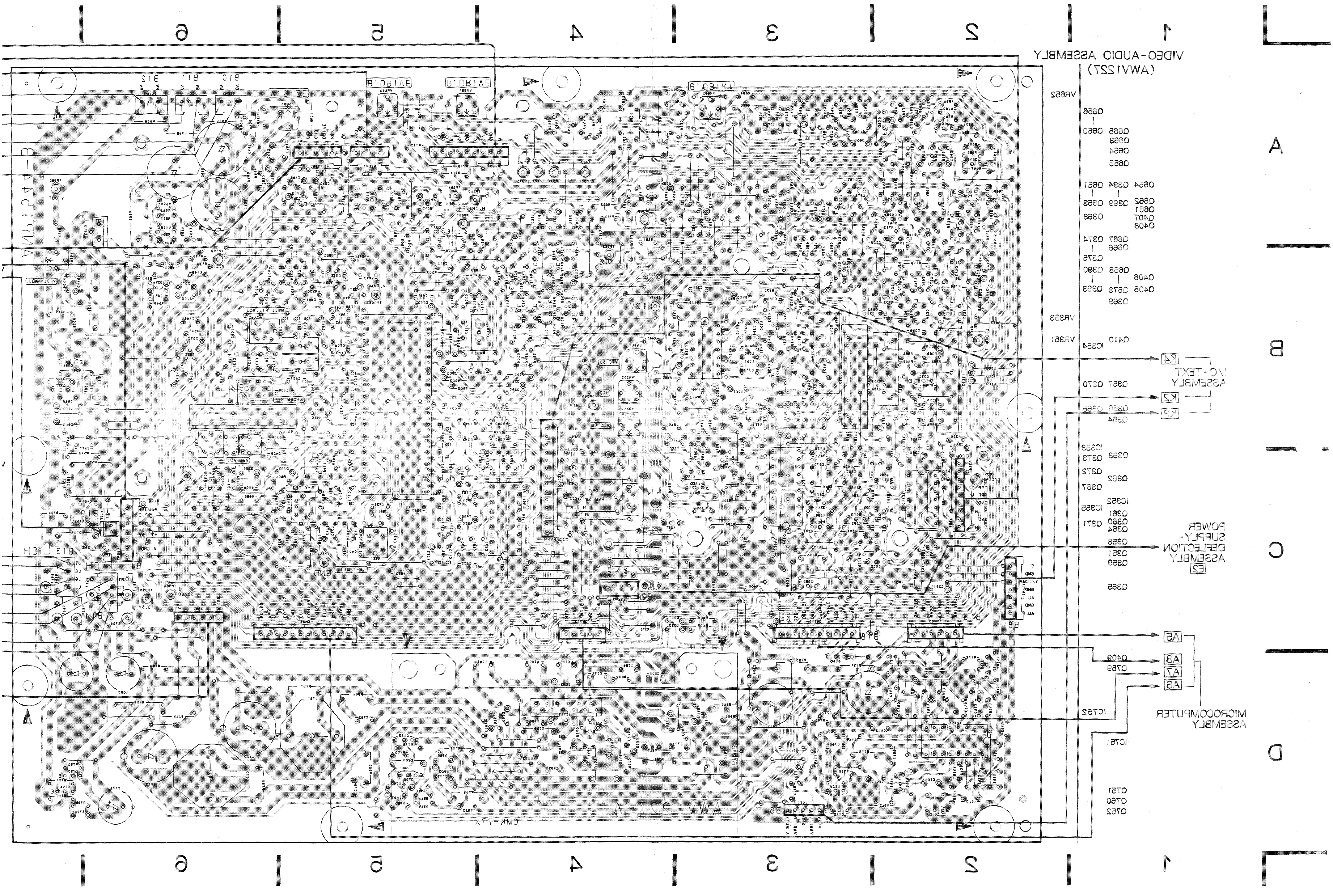
● Parts marked by ☆ are important parts which use X-rays. If any of these parts need to be replaced, always replace with specified parts.


12
11
10
9
8
7
A
B
C
D
G CRT DRIVE ASSEMBLY (AWZ3041)
R CRT DRIVE ASSEMBLY (AWZ3040)
B CRT DRIVE ASSEMBLY (AWZ3042)
ANP1396-C
CRT ASSEMBLY G
CRT ASSEMBLY R
CRT ASSEMBLY B
GREEN
RED
BLUE
GND
SCREEN
CONVERGENCE ASSEMBLY G3
Y-C SEPARATION ASSEMBLY (AWZ3999)
AWZ3999
CMK-77X
VR902
POWER SUPPLY-DEFLECTION ASSEMBLY
E3
E1
E17
E5
VDY
L1 (1/3) R
L2 (1/3) G
L3 (1/3) B
VR1 FOCUS VARIABLE RESISTOR
R FOCUS ADJ
G FOCUS ADJ
B FOCUS ADJ
R SCREEN ADJ
G SCREEN ADJ
B SCREEN ADJ
U1
DYNAMIC FOCUS ASSEMBLY
FOCUS
ANODE
MICROCOMPUTER ASSEMBLY A3
EXT. SP ASSEMBLY (AWZ4000)
AWZ4000
EXTERNAL SPEAKERS
SPEAKER SELECTOR
EXT
INT
DPO ASSEMBLY (AWZ4003)
AWZ4003
REMOTE SENSOR
FRONT ASSEMBLY (AWZ4002)
AWZ4002
W1
W2
POWER
INPUT
C/P
CH-
CH+
FACT
SET
MENU
TV SYS
SELECT
ADJ+
ADJ-
FINE TUNE
VOL+
VOL-
AV MEM
DPO
HIGH RANGE
MID-LOW RANGE
L
R
Q400
Q402
Q389
Q377
Q383
VR354
Q384
Q382
Q380
Q379
Q378
Q385
Q387
Q381
IC356
VR356
Q388
Q403
Q404
VR651
VR653
VR357
Q757
Q753
Q758
Q754
Q913 Q910 Q911 Q916
Q904 — Q906 Q902
Q971 Q972
Q907
Q908
Q903
IC901
Q901
Q915 Q912
Q909

This P. C. B. connection diagram is viewed from the foil side.

mark shows a high voltage generation point.

● Parts marked by ☆ are important parts which use X-rays. If any of these parts need to be replaced, always replace with specified parts.

 
VIDEO-AUDIO ASSEMBLY
(AWV1227)
I/O-TEXT ASSEMBLY
K4
K2
K3
POWER SUPPLY-DEFLECTION ASSEMBLY
E2
MICROCOMPUTER ASSEMBLY
A5
A8
A7
A6
1
2
3
4
5
6
A
B
C
D
VR652
VR353
VR351
Q656
Q660
Q665
Q663
Q664
Q655
Q654
Q394
Q651
Q652
Q399
Q653
Q661
Q407
Q408
Q388
Q667
Q374
Q666
Q376
Q668
Q390
Q406
Q405
Q673
Q393
Q369
Q410
IC354
Q357
Q370
Q356
Q386
Q354
IC353
Q373
Q363
Q372
Q362
Q367
IC352
IC355
Q361
Q371
Q360
Q364
Q358
Q351
Q359
Q365
Q409
Q759
IC752
IC751
Q751
Q760
Q752
R.DRIVE
B.DRIVE
V.SIZE
B.OBJKT
12V
V BLK ADJ
AWV1227-A
CMK-77X
B4
B5
B6
B7
B8
B10
B11
B12
B13 LCH
B13 RCH
B14
B16
B17

This P. C. B. connection diagram is viewed from the foil side.

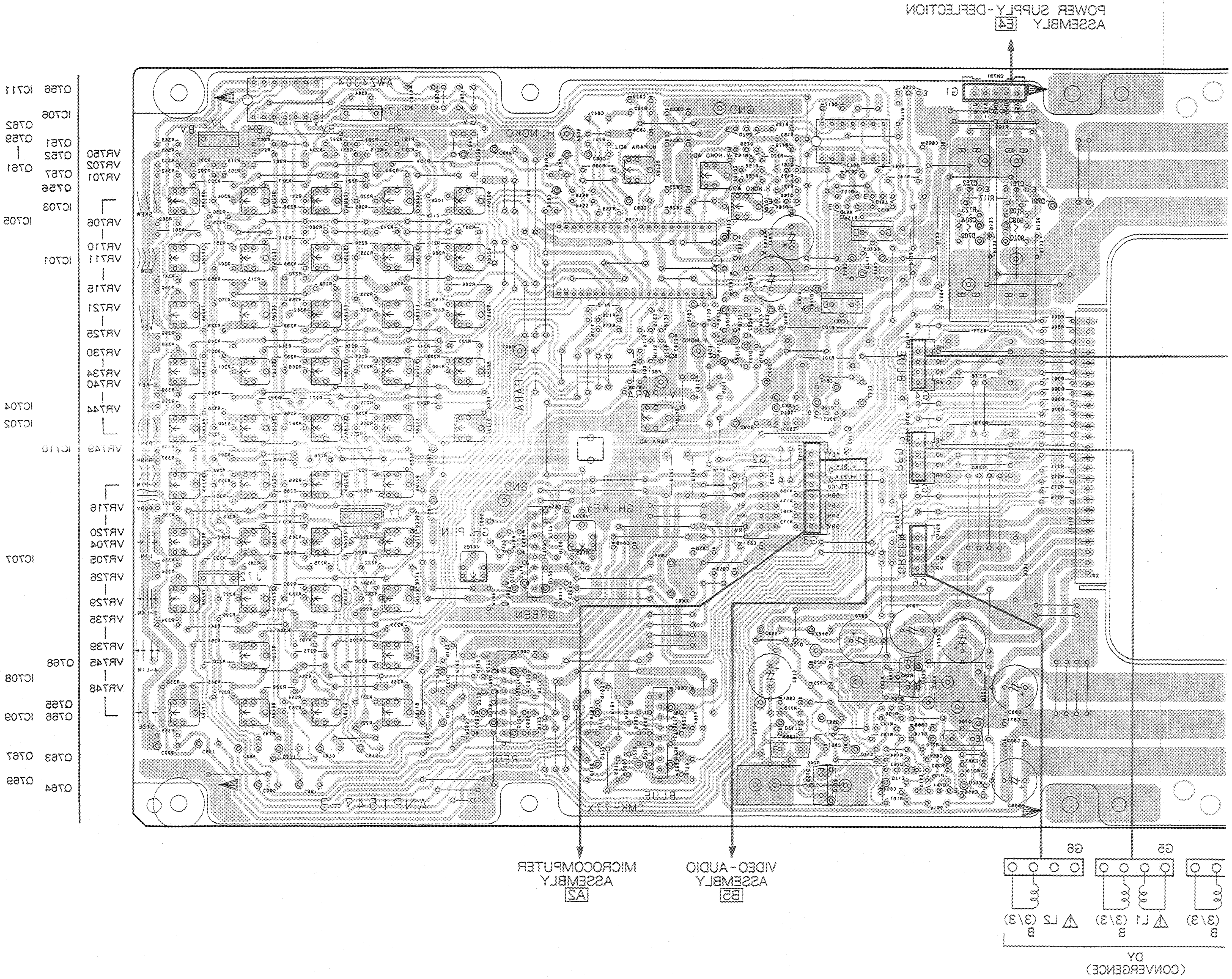
9 | 8 | 7 | 6 | 5 | 4

A

B

C

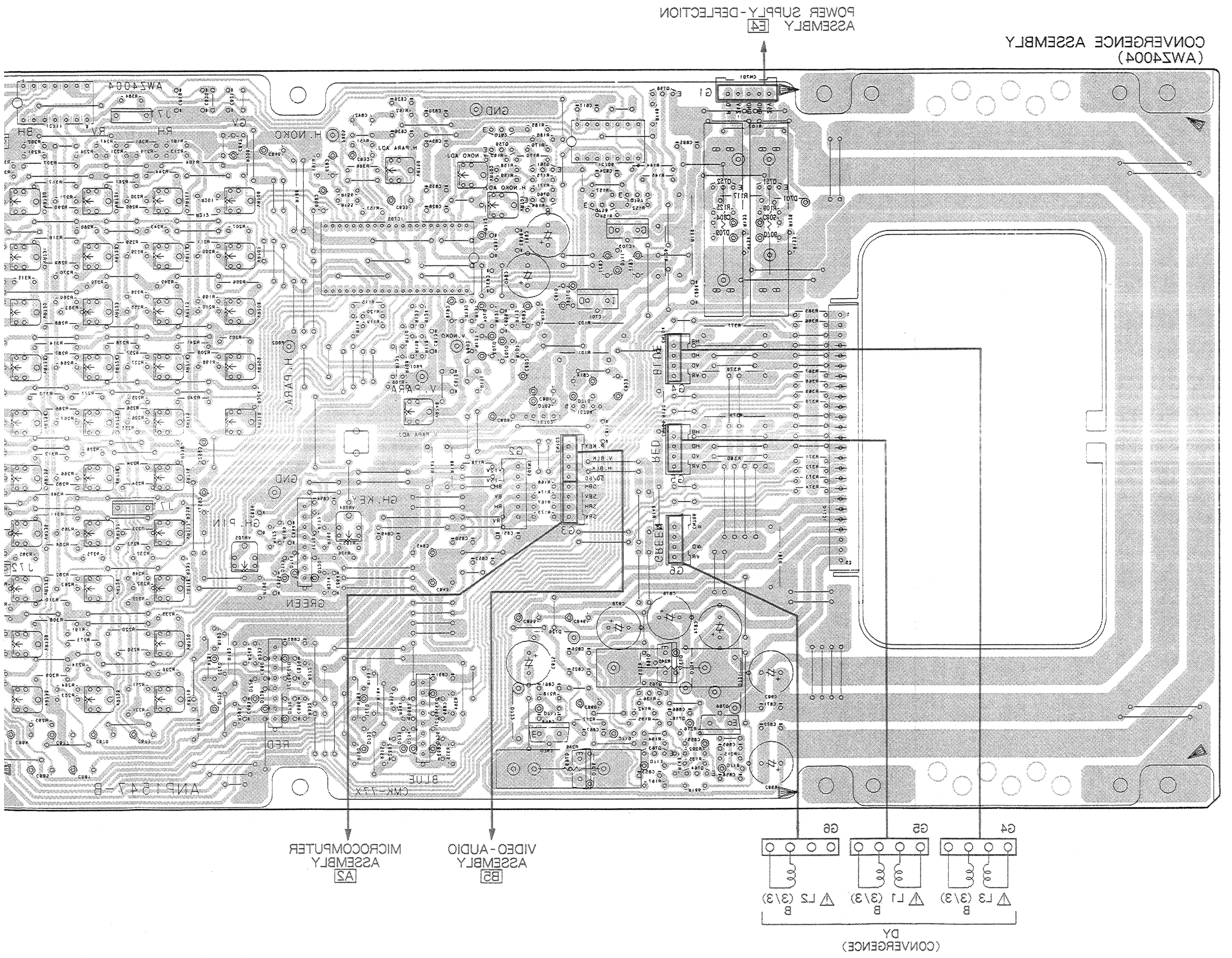
D



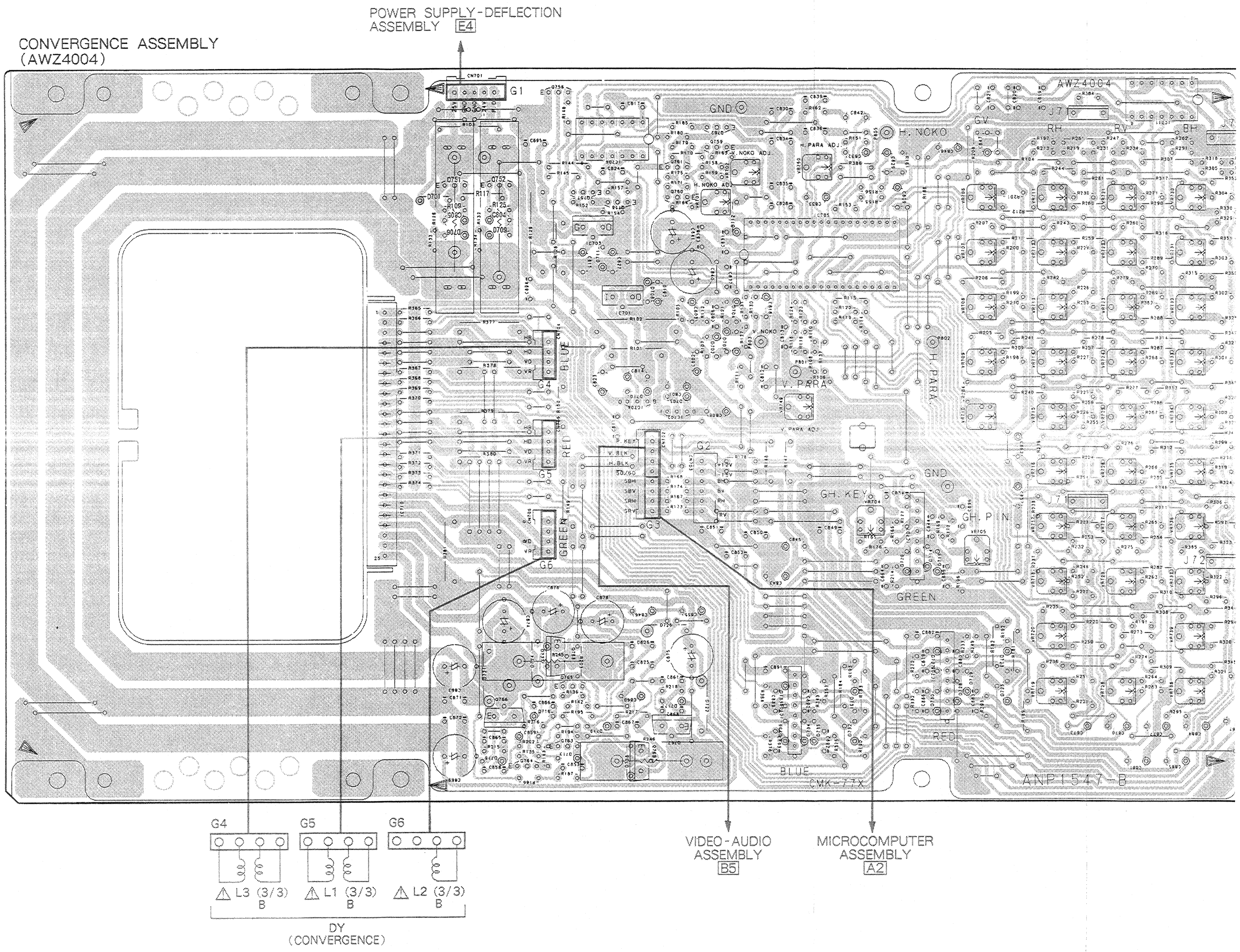
POWER SUPPLY-DEFLECTION ASSEMBLY E4
G1
AWZ4004
GND
H.NOKO
H.PARA
V.PARA
BLUE
RED
GREEN
G2
G3
G4
G5
G6
GH.KEY
GH.PIN
ANP1547-B
MICROCOMPUTER ASSEMBLY A2
VIDEO-AUDIO ASSEMBLY B5
B (3/3) L2
B (3/3) L1
B (3/3)
DY (CONVERGENCE)
IC711 Q756
IC706
Q762 Q759 — Q761
Q751 Q752 Q757 Q758
IC703
IC705
IC701
IC704
IC702
IC710
IC707
Q768
IC708
Q765 Q766
IC709
Q763 Q767
Q764 Q769
VR750 VR702 VR701
VR706 — VR710
VR711 — VR715
VR721 — VR725
VR730 — VR734
VR740 — VR744
VR749
VR716 — VR720
VR704 VR705
VR726 — VR729
VR735
VR739 — VR745
VR748

9 | 8 | 7 | 6 | 5 | 4

CONVERGENCE ASSEMBLY
(AWZ4004)

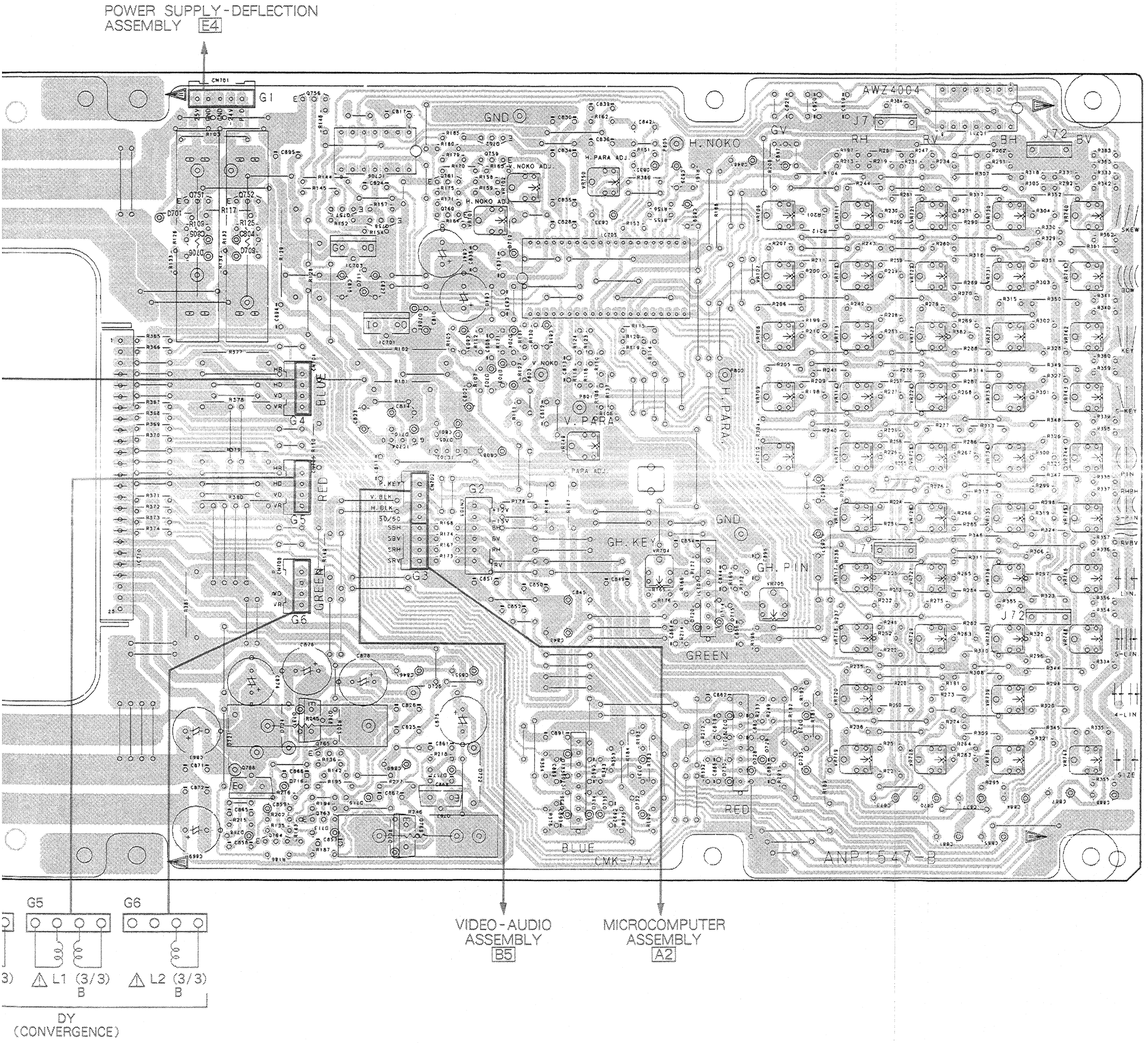

6
5
4
3
2
1
A
B
C
D
POWER SUPPLY-DEFLECTION
ASSEMBLY E4
CN701
G1
AWZ4004
GND
H.NOKO
H.PARA
V.PARA
GH.KEY
GH.PIN
GREEN
RED
BLUE
G2
G3
G4
G5
G6
ANP1547-B
CMK-17X
MICROCOMPUTER
ASSEMBLY
A2
VIDEO-AUDIO
ASSEMBLY
B5
G6
G5
G4
⚠ L2 (3/3)
B
⚠ L1 (3/3)
B
⚠ L3 (3/3)
B
DY
(CONVERGENCE)

CONVERGENCE ASSEMBLY
(AWZ4004)


POWER SUPPLY-DEFLECTION ASSEMBLY E4
CN701
G1
GND
H. NOKO
H. PARA ADJ
H. NOKO ADJ
H. PARA
V. PARA
V. PARA ADJ
V. NOKO
AWZ4004
GV
RH
RV
BH
J71
J72
BLUE
RED
GREEN
G2
G3
G4
G5
G6
HR
HD
VD
VR
P. KEY
V. BLK
H. BLK
50/60
GH. KEY
GH. PIN
GND
ANP1547-B
CMK-77X
VIDEO-AUDIO ASSEMBLY B5
MICROCOMPUTER ASSEMBLY A2
G4
G5
G6
⚠ L3 (3/3) B
⚠ L1 (3/3) B
⚠ L2 (3/3) B
DY (CONVERGENCE)

4 5 6 7 8 9

A


POWER SUPPLY-DEFLECTION ASSEMBLY E4
CN701
G1
GND
H. NOKO
V. NOKO ADJ.
H. NOKO ADJ.
H. PARA ADJ.
AWZ4004
J7
J72
GV
RH
RV
BH
BV
SKEW
BOW
KEY
S-KEY
PIN
RHBH
S-PIN
RVBV
LIN
S-LIN
4-LIN
SIZE
BLUE
G4
RED
G5
GREEN
G6
H. PARA
V. PARA
PARA ADJ.
G2
G3
P.KEY
V.BLK
H.BLK
50/60
GH. KEY
GH. PIN
GND
GREEN
RED
BLUE
CMK-77X
ANP1547-B
G5
G6
⚠ L1 (3/3) B
⚠ L2 (3/3) B
DY (CONVERGENCE)
VIDEO-AUDIO ASSEMBLY B5
MICROCOMPUTER ASSEMBLY A2

Q756 IC711
IC706 Q762
Q751 Q759
Q752 |
Q757 Q761
Q756
VR750
VR702
VR701
IC703
VR706
|
VR710 IC705
VR711 IC701
|
VR715
VR721
|
VR725

B

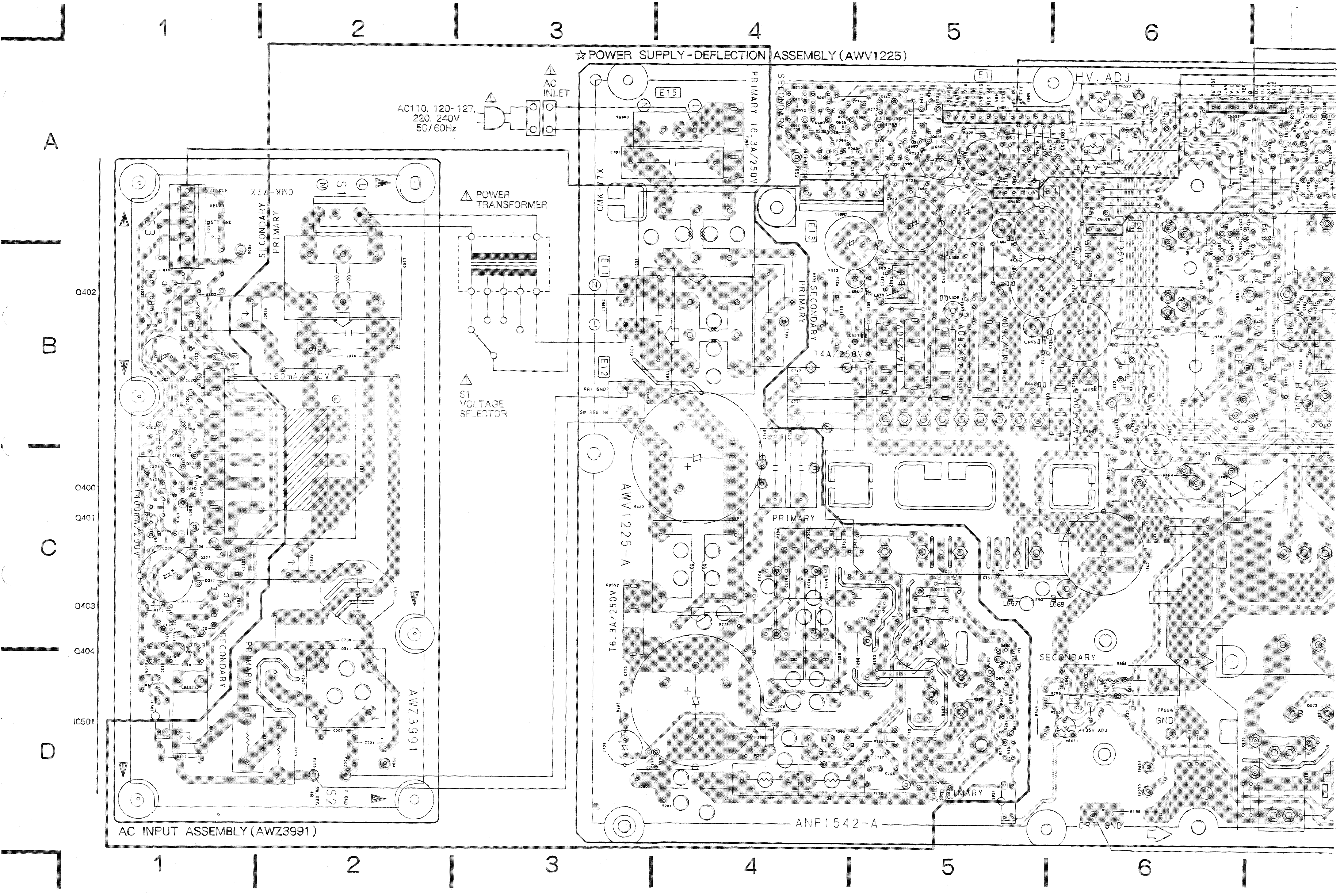
VR730
|
VR734
VR740
|
VR744 IC704
IC702
VR749 IC710
VR716
|
VR720
VR704
VR705 IC707
VR726
|
VR729

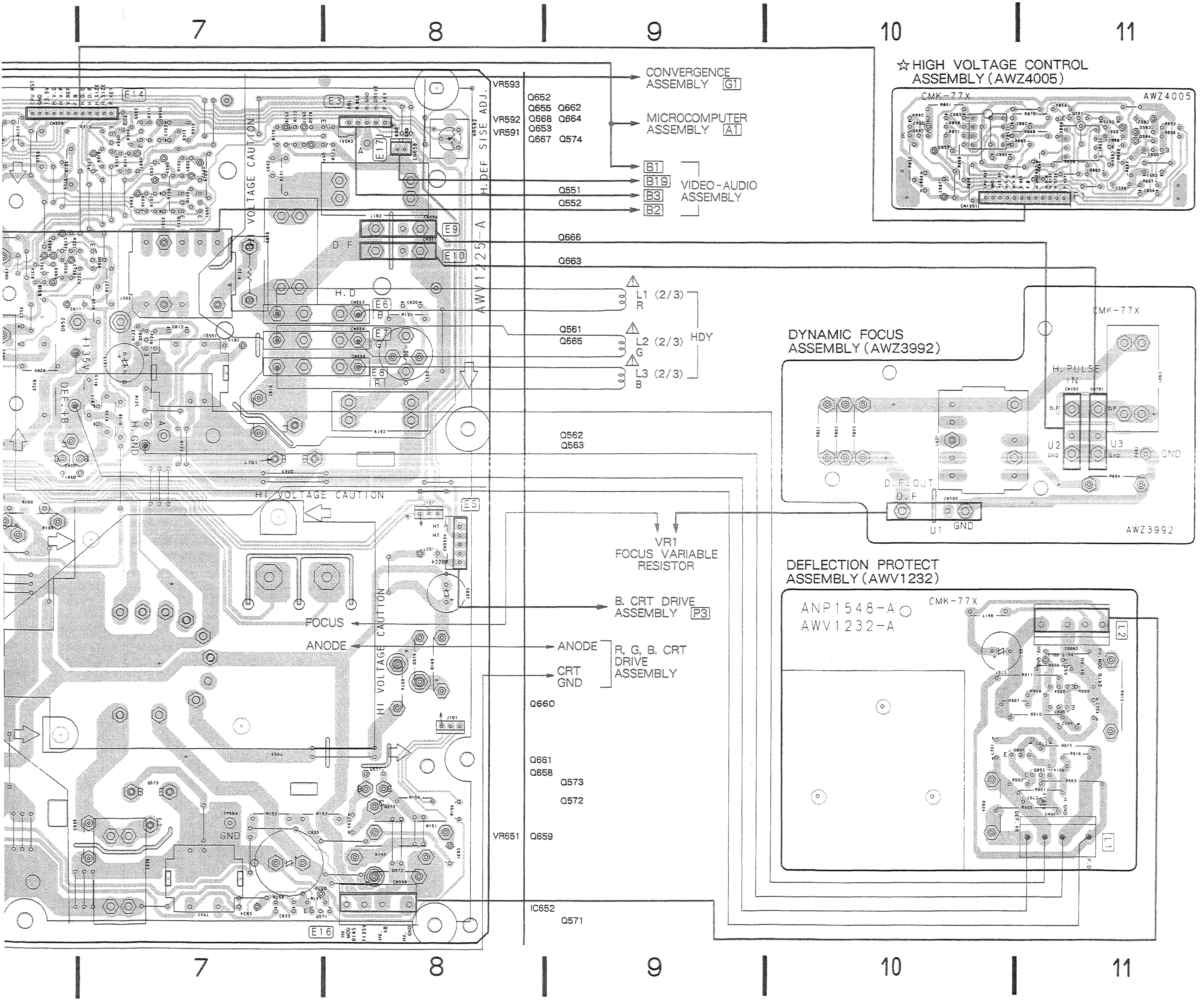
C

VR735
|
VR739
VR745 Q768
| IC708
VR748
Q765
Q766 IC709
Q763 Q767
Q764 Q769

D

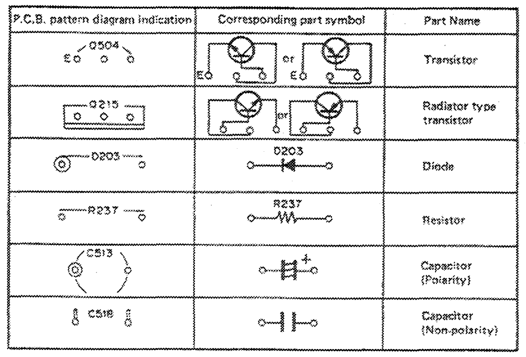
4 5 6 7 8 9


1
2
3
4
5
6
A
B
C
D
☆POWER SUPPLY-DEFLECTION ASSEMBLY (AWV1225)
AC INPUT ASSEMBLY (AWZ3991)
AC110, 120-127, 220, 240V 50/60Hz
AC INLET
POWER TRANSFORMER
S1 VOLTAGE SELECTOR
HV. ADJ
X-RAY
AWV1225-A
ANP1542-A
AWZ3991
CMK-77X
T160mA/250V
T400mA/250V
T6.3A/250V
T4A/250V
PRIMARY
SECONDARY
GND
+135V
DEF. +B
CRT GND
TP556 GND
+135V ADJ
E1
E2
E4
E11
E12
E13
E14
E15
S1
S2
S3
L567
L668
Q402
Q400
Q401
Q403
Q404
IC501


7
8
9
10
11
12
CONVERGENCE ASSEMBLY G1
MICROCOMPUTER ASSEMBLY A1
B1
B19
B3
B2
VIDEO-AUDIO ASSEMBLY
VR593
VR592
VR591
Q652
Q655 Q662
Q668 Q664
Q653
Q667 Q574
Q551
Q552
Q666
Q663
Q561
Q665
Q562
Q563
L1 (2/3) R
L2 (2/3) G
L3 (2/3) B
HDY
VOLTAGE CAUTION
H. DEF SISE ADJ.
AWV1225-A
E14
E3
E17
E9
E10
E6
E7
E8
E5
E16
H. D
D. F
+135V
DEF. +B
H. GND
HI VOLTAGE CAUTION
VR1
FOCUS VARIABLE RESISTOR
B. CRT DRIVE ASSEMBLY P3
FOCUS
ANODE
ANODE
CRT GND
R, G, B. CRT DRIVE ASSEMBLY
Q660
Q661
Q658
Q573
Q572
VR651
Q659
IC652
Q571
GND
HV MOD BIAS
+135V
HV +B
HV GND
☆HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005)
CMK-77X
AWZ4005
DYNAMIC FOCUS ASSEMBLY (AWZ3992)
CMK-77X
H. PULSE IN
U2
U3
GND
D. F. OUT
D. F
U1
GND
AWZ3992
DEFLECTION PROTECT ASSEMBLY (AWV1232)
ANP1548-A
AWV1232-A
CMK-77X
L2
L1

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.



| P.C.B. pattern diagram indication | Corresponding part symbol | Part Name |
|---|---|---|
| E 0504 | E or E | Transistor |
| 0215 | or | Radiator type transistor |
| 0203 | 0203 | Diode |
| R237 | R237 | Resistor |
| C513 | + | Capacitor (Polarity) |
| C518 | | Capacitor (Non-polarity) |

Others

| P.C.B. pattern diagram indication | Part Name |
|---|---|
| IC | IC |
| S | Switch |
| RY | Relay |
| L | Coil |
| F | Filter |
| VR | Variable resistor or Semi-fixed resistor |

3. The capacitor terminal marked with ◎ (double circles) shows negative terminal.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

▭ mark shows the charged section (Power supply primary side circuit).
▨ mark shows a high voltage generation point.

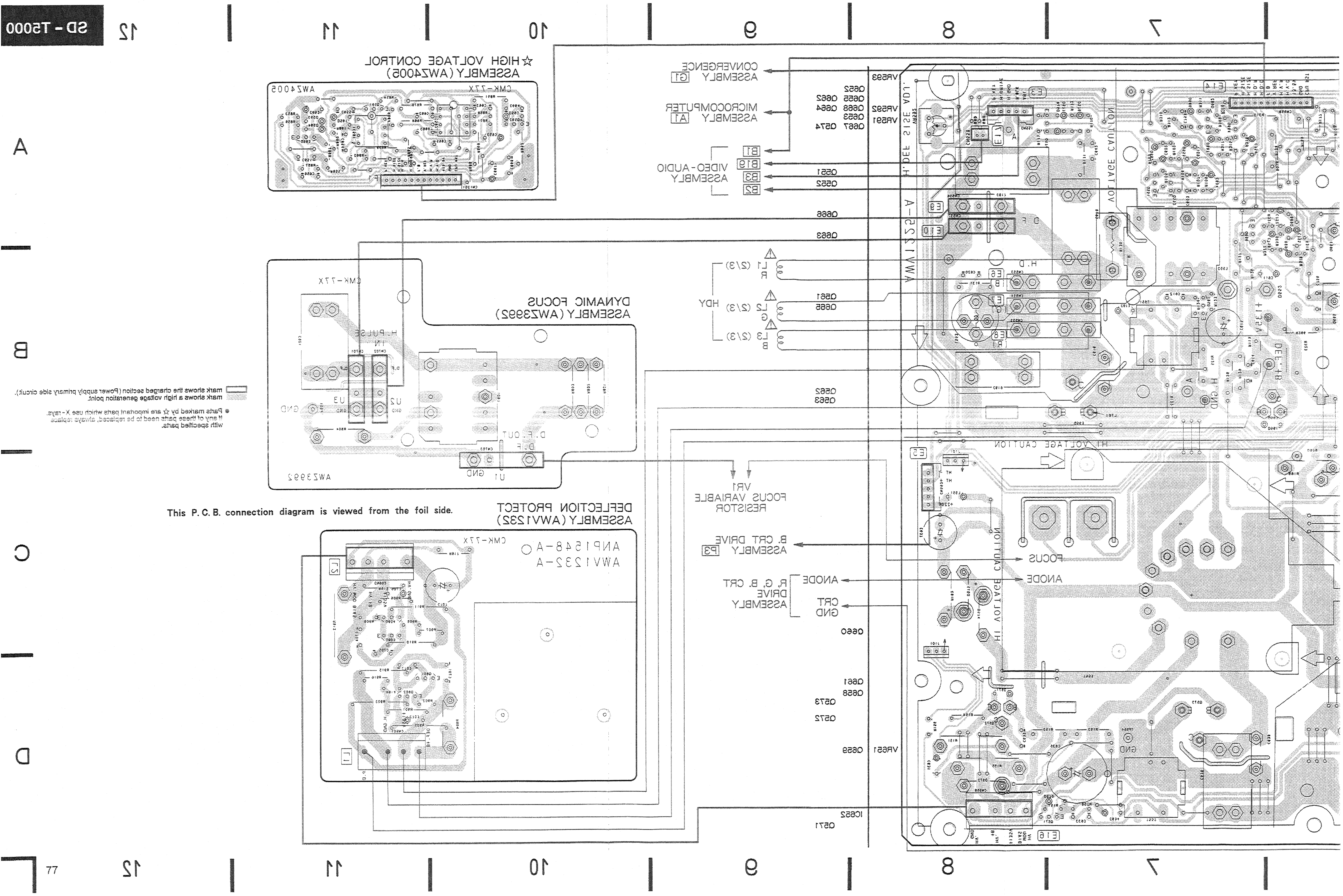
- Parts marked by ☆ are important parts which use X-rays. If any of these parts need to be replaced, always replace with specified parts.

A

B

C

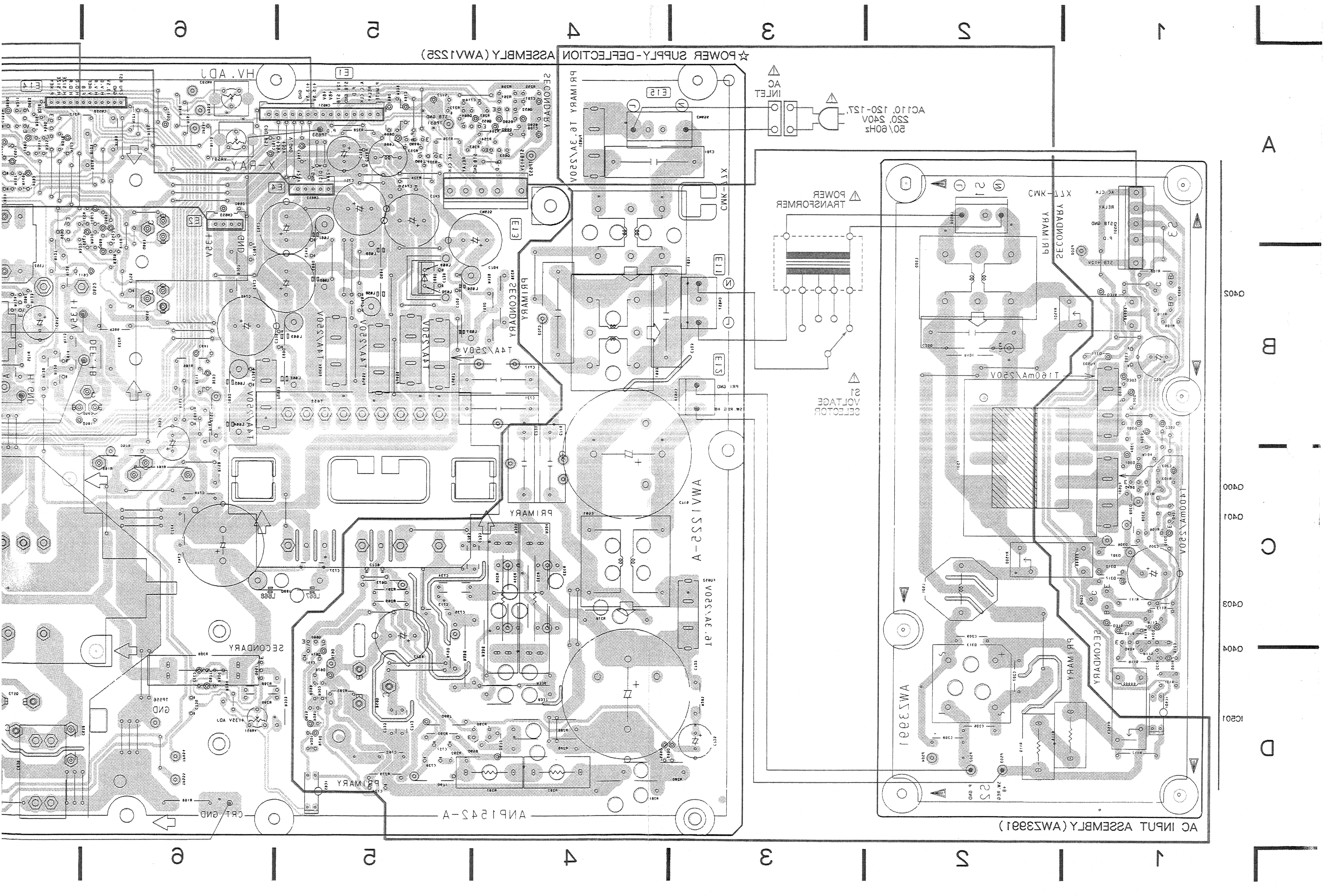
D


12
11
10
9
8
7
A
B
C
D
☆HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005)
AWZ4005
CMK-77X
CONVERGENCE ASSEMBLY G1
MICROCOMPUTER ASSEMBLY A1
VIDEO-AUDIO ASSEMBLY
B1
B19
B3
B2
Q652 Q662 Q655 Q664 Q668 Q653 Q667 Q574
VR693
VR692
VR691
Q651
Q652
Q666
Q663
DYNAMIC FOCUS ASSEMBLY (AWZ3992)
AWZ3992
H.PULSE IN
D.F
U3
U2
GND
D.F.OUT
U1
L1 (2/3) R
L2 (2/3) G
L3 (2/3) B
HDY
Q661
Q665
Q662
Q663
VR1 FOCUS VARIABLE RESISTOR
DEFLECTION PROTECT ASSEMBLY (AWV1232)
ANP1548-A
AWV1232-A
B. CRT DRIVE ASSEMBLY P3
R, G, B, CRT DRIVE ASSEMBLY
ANODE
CRT GND
FOCUS
ANODE
Q660
Q661
Q658
Q573
Q572
Q659
VR651
IC652
Q571
AWV1252-A
H. DEF. SIZE ADJ.
HI VOLTAGE CAUTION
HI VOLTAGE CAUTION
E3
E9
E10
E6
E7
E8
E5
E14
E16
H.D
+135V
DEF.+B
GND
J1
L1

mark shows the charged section (Power supply primary side circuit).
mark shows a high voltage generation point.

● Parts marked by ☆ are important parts which use X-rays. If any of these parts need to be replaced, always replace with specified parts.

This P. C. B. connection diagram is viewed from the foil side.


☆POWER SUPPLY-DEFLECTION ASSEMBLY (AWV1225)
AC INPUT ASSEMBLY (AWZ3991)
AC INLET
AC110, 120-127, 220, 240V 50/60Hz
POWER TRANSFORMER
S1 VOLTAGE SELECTOR
PRIMARY
SECONDARY
HV. ADJ
X-RAY
+135V ADJ
CRT GND
GND
T6.3A/250V
T4A/250V
T160mA/250V
T400mA/250V
AWV1225-A
ANP1542-A
AWZ3991
Q402
Q400
Q401
Q403
Q404
IC501
A
B
C
D
1
2
3
4
5
6

# 6. PCB PARTS LIST

*NOTES:*

- *Part without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

  *Ex.1 When there are 2 effective digits(any digit apart from 0), such as 560 ohm and 47k ohm(tolerance is shown by J=5%, and K=10%).*

  *560 Ω→56 × $10^1$ →561 ........................................................ RD1/8PM$\boxed{5}\boxed{6}\boxed{1}$J*
  *47k Ω→47 × $10^3$ →473 ........................................................ RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J*
  *0.5 Ω→0R5 ........................................................ RN2H$\boxed{0}\boxed{R}\boxed{5}$K*
  *1 Ω→010 ........................................................ RS1P$\boxed{0}\boxed{1}\boxed{0}$K*

  *Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).*

  *5.62k Ω→562 × $10^1$ →5621 ........................................... RN1/4SR$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F*
- *Parts marked by ☆ are important parts which relate with X-ray radiation.*
  *If any of these parts need to be replaced, always replace with specified parts.*
- *Parts marked by × are important parts which relate with X-ray radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself. If any part marked by × is replaced, there is danger of being exposed to X-rays.*

## R. CRT DRIVE ASSEMBLY (AWZ3040)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | Q801 | TRANSISTOR | 2SC2278 |
| | D801 | DIODE | 1SS252 |

### COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | L801, 802 | AXIAL INDUCTOR | LAU470K |
| | L803 | AXIAL INDUCTOR | LAU101K |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C921 | ELECTR. CAPACITOR | CEAS101M16 |
| | C922 | CERAMIC CAPACITOR | CKCYB681K50 |
| | C923 | ELECTR. CAP. (4.7μ/250V) | ACH-378 |
| | C924 | CERAMIC CAP. (1000p/2kV) | ACG1001 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | R751 | CARBONFILM RESISTOR | RD1/8PM103J |
| | R752 | RESISTOR(1kΩ, 1/2W) | ACN1006 |
| | R753, 754 | METAL OXIDE RESISTOR | RS3LMF332J |
| | R755 | RESISTOR(47Ω, 1/2W) | ACN-225 |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | CRT SOCKET | AKG1004 |

## G. CRT DRIVE ASSEMBLY (AWZ3041)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | Q821 | TRANSISTOR | 2SC2278 |
| | D821 | DIODE | 1SS252 |

### COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | L821, 822 | AXIAL INDUCTOR | LAU470K |
| | L823 | AXIAL INDUCTOR | LAU101K |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C931 | ELECTR. CAPACITOR | CEAS101M16 |
| | C932 | CERAMIC CAPACITOR | CKCYB681K50 |
| | C933 | ELECTR. CAP. (4.7μ/250V) | ACH-378 |
| | C934 | CERAMIC CA. (1000p/2kV) | ACG1001 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | R761 | CARBONFILM RESISTOR | RD1/8PM103J |
| | R762 | RESISTOR(1kΩ, 1/2W) | ACN1006 |
| | R763, 764 | METAL OXIDE RESISTOR | RS3LMF332J |
| | R765 | RESISTOR(47Ω, 1/2W) | ACN-225 |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | CRT SOCKET | AKG1004 |

## B. CRT DRIVE ASSEMBLY (AWZ3042)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | Q841 | TRANSISTOR | 2SC2278 |
| | D841 | DIODE | 1SS252 |

### COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | L841, 842 | AXIAL INDUCTOR | LAU470K |
| | L843 | AXIAL INDUCTOR | LAU101K |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C941 | ELECTR. CAPACITOR | CEAS101M16 |
| | C942 | CERAMIC CAPACITOR | CKCYB681K50 |
| | C943 | ELECTR. CAP. (4.7μ/250V) | ACH-378 |
| | C944 | CERAMIC CAP. (1000p/2kV) | ACG1001 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | R771 | CARBONFILM RESISTOR | RD1/8PM103J |
| | R772 | RESISTOR(1kΩ, 1/2W) | ACN1006 |
| | R773, 774 | METAL OXIDE RESISTOR | RS3LMF332J |
| | R775 | RESISTOR(47Ω, 1/2W) | ACN-225 |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | CRT SOCKET | AKG1004 |

## ☆ POWER SUPPLY-DEFLECTION ASSEMBLY (AWV1225)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | IC652 | PHOTOCUPLER | ON3171-Q |
| × | Q551, 552 | TRANSISTOR | |
| ⚠ | Q561 | TRANSISTOR | 2SC3332 |
| ⚠ | Q562 | TRANSISTOR | 2SD1276A |
| ⚠ | Q563 | TRANSISTOR | 2SD2300 |
| ⚠ | Q571 | TRANSISTOR | 2SC3332 |
| ⚠ | Q572 | TRANSISTOR | 2SD1276A |
| ⚠ | Q573 | TRANSISTOR | 2SD2300 |
| | Q574 | TRANSISTOR | 2SC1740S |
| | Q652, 653 | TRANSISTOR | 2SA933S |
| | Q655 | TRANSISTOR | 2SC1740S |
| ⚠ | Q658 | TRANSISTOR | 2SC3552 |
| | Q659 | TRANSISTOR | 2SB824 |
| | Q660 | TRANSISTOR | 2SC1740S |
| | Q661 | TRANSISTOR | 2SC2705 |
| | Q662, 664 | TRANSISTOR | 2SA933S |
| ⚠ | Q663, 665 | TRANSISTOR | 2SD1275 |
| | Q666-668 | TRANSISTOR | 2SC1740S |
| × | D551, 552 | ZENER DIODE | |
| | D553, 561 | DIODE | 1SS252 |
| ⚠ | D562 | DIODE | 11E2 |
| | D570, 571 | DIODE | 1SS252 |
| ⚠ | D572 | DIODE | RL2Z |
| × | D573 | DIODE | |
| ⚠ | D574, 575 | DIODE | ES1F |
| | D576 | ZENER DIODE | RD20ESB2 |
| | D577, 578 | DIODE | 1SS252 |
| | D579 | DIODE | 11E2 |
| | D656 | ZENER DIODE | HZS6B1L |
| | D659-661 | DIODE | 1SS252 |
| | D664, 666 | DIODE | 1SS252 |
| | D667 | DIODE | 1SS252 |
| | D668, 669 | ZENER DIODE | RD9.1ESB2 |
| | D670, 671 | DIODE | 11DF1FD |
| | D672 | DIODE | 1SS252 |
| | D673 | DIODE | 11DF1FD |
| | D674-676 | DIODE | 1SS252 |
| | D677 | ZENER DIODE | HZS6C2L |
| | D678 | DIODE | 1SS252 |
| | D679 | DIODE | RP1H |
| | D680 | DIODE | RL4Z |
| | D681 | DIODE | RG4A |
| | D682 | DIODE | FMP-G12S |
| | D683-685 | DIODE | RL4Z |
| | D686 | ZENER DIODE | HZS6A1L |
| | D687 | ZENER DIODE | HZS6B1L |
| | D688 | ZENER DIODE | HZS18-1L |
| | D689 | ZENER DIODE | HZS6B1L |
| | D690 | ZENER DIODE | RD39ESB4 |
| | D691 | DIODE | RL4Z |

### TRANSFORMERS, COILS AND FILTERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | T551, 552 | H. DRIVE TRANSFORMER | ATK1045 |
| ⚠× | T553 | CONVERTER TRANS | |
| ⚠ | T652 | CONVERTER TRANS | ATK1062 |
| ⚠ | L551 | INDUCTOR | LTA272J |
| ⚠ | L552 | COIL(7μH) | ATL1053 |
| ⚠ | L553 | COIL | ATL1058 |
| ⚠ | L651, 652 | LINE FILTER | ATF1089 |
| ⚠ | L653 | LINE FILTER | ATF-207 |
| | L656-665 | FERRITE BEAD | ATX-028 |
| | L666 | COIL(1μH) | ATH-133 |
| | L667-670 | FERRITE BEAD | ATX-028 |
| | L701 | FERRITE BEAD | ATX-028 |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C601 | ELECTR. CAPACITOR | CEAS221M16 |
| | C602 | ELECTR. CAPACITOR | CEAS470M16 |
| | C603 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C604 | ELECTR. CAPACITOR | CEAS221M16 |
| ⚠ | C606 | ELE. CAP. (33μ/160V) | ACH-370 |
| | C611 | ELECTROLYTIC CAPACIT | CEHAQ010M2C |
| | C612 | CERAMIC CAPACITOR | CKCYB102K500 |
| | C613 | ELECTR. CAPACITOR | CEHAQ010M50 |
| | C614 | CERAMIC CAPACITOR | CCCSL101K500 |
| ⚠ | C615 | ELE. CAP. (1μ/160V) | ACH-372 |
| ⚠ | C616 | CER. CAP. (680p/2KV) | ACG1024 |
| ⚠ | C617 | M. P. P. CAPACITOR | CFPHW683H3A |
| ⚠ | C618 | CAPACITOR | CFPHW123H3D |
| ⚠ | C619 | MPP CAP. (0.82μ/200V) | ACE1044 |
| | C620 | CERAMIC CAPACITOR | CCCSL181J50 |
| | C631 | ELECTROLYTIC CAPACIT | CEHAQ010M2C |
| | C632 | CERAMIC CAPACITOR | CCCSL101K500 |
| | C633 | CERAMIC CAPACITOR | CKDYB472K500 |
| | C634 | ELECTR. CAPACITOR | CEHAQ010M50 |
| ⚠ | C635 | ELE. CAP. (10μ/160V) | ACH1117 |
| | C636 | ELECTR. CAPACITOR | CEHAQ100M50 |
| | C637 | ELECTROLYTIC CAPACIT | CEHAQ220M2C |
| ⚠ | C638 | CER. CAP. (680p/2kV) | ACG1024 |
| ⚠ | C639 | CAPACITOR | CFPHW123H3D |
| | C640 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C641 | ELECTROLYTIC CAPACIT | CEHAQ220M50 |
| | C642 | CERAMIC CAPACITOR | CCCSL151K500 |
| ⚠ | C701-703 | FLM CAP. (0.1μ/250V) | ACE-507 |
| | C704 | ELECTR. CAPACITOR | CEHAQ222M35 |
| | C705 | CERAMIC CAPACITOR | CCCSL221K500 |
| | C707 | ELECTR. CAPACITOR | CEAS470M25 |
| | C708 | ELECTR. CAPACITOR | CEAS010M50 |
| ⚠ | C712 | CKA (2200p/2kV) | ACG-039 |
| ⚠ | C713 | CER CAP (4700p/2kV) | ACG1028 |
| | C714 | CERAMIC CAPACITOR | CCCSL151J50 |
| | C715 | ELECTR. CAPACITOR | CEAS101M16 |
| ⚠ | C717, 718 | CKA (4700p/AC400V) | ACG-505 |
| ⚠ | C719 | ELECTR. CAP. (470μ/400V) | ACH1170 |
| ⚠ | C720, 721 | CFPA (0.01μ/AC250V) | ACE-501 |
| ⚠ | C722 | ELECTR. CAP. (560μ/400V) | ACH1214 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | C723 | CKA (1800p/2kV) | ACG-046 |
| | C724 | AUDIO FILM CAPACITOR | CFTXA224J50 |
| ⚠ | C725 | CEA (4.7μ/400V) | ACH1215 |
| | C726 | AUDIO FILM CAPACITOR | CFTXA474J50 |
| | C727 | CERAMIC CAPACITOR | CCCSL221K500 |
| ⚠ | C728 | ELECTR. CAP. (47μ/100V) | ACH1132 |
| | C729 | CERAMIC CAPACITOR | CCCSL221K500 |
| | C730 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C731 | MYLAR FILM CAPACITOR | CQMA822J50 |
| | C732 | ELECTR. CAPACITOR | CEAS010M50 |
| ⚠ | C733 | CER. CAP. (1000p/2kV) | ACG-040 |
| ⚠ | C734 | CER CAP (4700p/2kV) | ACG1028 |
| ⚠ | C735 | CER. CAP. (680p/2kV) | ACG1024 |
| | C736 | CERAMIC CAPACITOR | CCCSL221K500 |
| ⚠ | C737 | CCA (100p/2kV) | ACG-032 |
| | C738, 739 | CERAMIC CAPACITOR | CCCSL221K500 |
| | C740 | ELECTR. CAPACITOR | CEHAQ222M50 |
| ⚠ | C741 | ELECTR. CAP. (560μ/160V) | ACH1146 |
| | C742 | ELECTR. CAPACITOR | CEHAQ222M35 |
| | C743 | ELECTROLYTIC CAPACIT | CEHAQ332M35 |
| | C744 | CERAMIC CAPACITOR | CKDYF103Z500 |
| | C745 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C746, 747 | CERAMIC CAPACITOR | CCCSL221K500 |
| | C748 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C749 | CERAMIC CAPACITOR | CKDYF103Z500 |
| | C750 | ELECTR. CAPACITOR | CEAS331M35 |
| | C751, 752 | ELECTR. CAPACITOR | CEHAQ222M35 |
| | C753 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C754, 755 | ELECTR. CAPACITOR | CEAS100M50 |
| | C756 | CERAMIC CAPACITOR | CKCYB681K50 |
| | C757 | ELECTR. CAPACITOR | CEAS010M50 |
| | C758 | ELECTR. CAPACITOR | CEAS100M50 |
| | C759 | ELECTR. CAPACITOR | CEAS221M16 |
| | C760 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C761 | ELECTR. CAPACITOR | CEAS010M50 |
| | C762 | CKA (2200p/2kV) | ACG-039 |
| ⚠ | C763 | CER. CAP. (1000p/2kV) | ACG-040 |
| | C764 | ELECTR. CAPACITOR | CEAS101M16 |

## RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠× | VR591 | VR | |
| | VR592 | VR(2.2kΩ) | VRTS6VS222 |
| × | VR593 | VR | |
| | VR651 | VR(1kΩ) | VRTS6VS102 |
| × | R101 | CARBON FILM RESISTOR | |
| × | R103 | CARBONFILM RESISTOR | |
| ⚠ | R104 | CARBON FILM RESISTOR | RD1/4PMFL3R9J |
| × | R105 | CARBONFILM RESISTOR | |
| × | R107 | CARBONFILM RESISTOR | |
| × | R108 | CARBONFILM RESISTOR | |
| × | R109 | CARBONFILM RESISTOR | |
| ⚠× | R110 | METALFILM RESISTER | |
| ⚠× | R111 | METALFILM RESISTER | |
| ⚠ | R113 | CARBON FILM RESISTOR | RD1/4PMFL470J |
| ⚠ | R125 | CARBONFILM RESISTOR | RD1/2PMFL102J |
| | R126 | CARBONFILM RESISTOR | RD1/2PM473J |
| | R127 | CARBON FILM RESISTOR | RD1/2PM153J |
| ⚠ | R128 | CARBON FILM RESISTOR | RD1/4PMFL682J |
| ⚠ | R129 | CARBON FILM RESISTOR | RD1/4PMFL471J |
| ⚠ | R130 | RESISTOR (3.3Ω, 5W) | ACN1050 |
| | R131 | CARBONFILM RESISTOR | RD1/2PM152J |
| | R151 | METAL OXIDE RESISTOR | RS3PMF512J |
| ⚠ | R152 | CARBON FILM RESISTOR | RD1/4PMFL152J |
| ⚠ | R153 | CARBON FILM RESISTOR | RD1/4PMFL471J |
| × | R154 | CARBONFILM RESISTER | |
| ⚠ | R155 | METAL OXIDE RESISTOR | RS3PMFR47J |
| ⚠ | R159 | CARBON FILM RESISTOR | RD1/4PMFL101J |
| ⚠× | R160 | METALFILM RESISTER | |
| ⚠× | R161 | METALFILM RESISTER | |
| | R162 | METAL OXIDE RESISTOR | RS2PMF101J |
| ⚠× | R163 | CARBON FILM RESISTOR | |
| ⚠ | R164, 165 | METALFILM RESISTER | RN1/2PC4302F |
| ⚠ | R167 | CARBONFILM RESISTOR | RD1/2PMFL122J |
| | R168 | RESISTOR(47Ω, 1/2W) | ACN-225 |
| ⚠ | R169 | CARBON FILM RESISTOR | RD1/4PMFL3R9J |
| | R171 | CARBONFILM RESISTOR | RD1/2PM123J |
| × | R177 | CARBONFILM RESISTER | |
| | R266 | METALFILM RESISTER | RN1/4PC1603F |
| | R278 | METAL OXIDE RESISTOR | RS3LMF104J |
| ⚠ | R279 | CARBON FILM RESISTOR | RD1/2PMFL222J |
| | R280, 281 | METAL OXIDE RESISTOR | RS3LMF1R0J |
| ⚠ | R282 | RESISTOR (4.7Ω, 5W) | ACN1051 |
| ⚠ | R285 | CARBON FILM RESISTOR | RD1/2PMFL103J |
| | R286 | METAL OXIDE RESISTOR | RS3LMF6R8J |
| ⚠ | R287 | RESISTOR (3.9Ω, 5W) | ACN1062 |
| | R288 | METAL OXIDE RESISTOR | RS3LMF6R8J |
| | R289, 291 | CARBONFILM RESISTOR | RD1/2PM241J |
| | R293 | CARBONFILM RESISTOR | RD1/2PM101J |
| | R294 | METALFILM RESISTER | RN1/4PC3601F |
| | R295 | METAL OXIDE RESISTOR | RS3LMF223J |
| | R296, 298 | METALFILM RESISTER | RN1/4PC1603F |
| | R303 | METAL OXIDE RESISTOR | RS2LMF223J |
| | R304 | RESISTOR(10Ω, 10W) | RT10PD100K |
| | R305 | RESISTOR(12Ω, 10W) | RT10PD120K |
| | R306 | METAL OXIDE RESISTOR | RS3LMF223J |
| | R307 | METAL OXIDE RESISTOR | RS1LMF272J |
| | R308 | RESISTOR(1.5Ω, 7W) | RT7PD1R5K |
| | R321 | METALFILM RESISTER | RN1/4PC2101F |
| | R322 | METALFILM RESISTER | RN1/4PC2431F |
| | R323 | METAL OXIDE RESISTOR | RS3LMF183J |
| | R332-337 | METAL OXIDE RESISTOR | RS3LMF223J |
| | R338 | METAL OXIDE RESISTOR | RS2LMF101J |
| | R339 | METAL OXIDE RESISTOR | RS2LMF220J |
| | OTHER RESISTORS | | RD1/8PM☐☐☐J |

## AC INPUT ASSEMBLY (AWZ3991)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | IC501 | PHOTOCUPLER | ON3171-Q |
|  | Q400 | TRANSISTOR | 2SA933S |
|  | Q401 | TRANSISTOR | 2SC1740S |
|  | Q402, 403 | TRANSISTOR | 2SD1275 |
|  | Q404 | TRANSISTOR | 2SD438 |
|  | D300, 301 | DIODE | 1SS145 |
|  | D302 | ZENER DIODE | HZS6B1L |
|  | D303, 304 | DIODE | 1SS145 |
|  | D305 | DIODE | 1SS252 |
|  | D306-309 | DIODE | 11E2 |
|  | D310 | DIODE | 1SS252 |
|  | D311, 312 | ZENER DIODE | RD6. 2ESB2 |
|  | D313 | DIODE | RB604 |
|  | D314 | DIODE | 1SS252 |
|  | D315-318 | ZENER DIODE | RD6. 2ESB2 |

### RELAYS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | RY501, 502 | RELAY | ASR1036 |
| ⚠ | RY503 | RELAY | ASR1027 |

### TRANSFORMER AND COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | T501 | POWER TRANSFORMER | ATT1180 |
| ⚠ | L500 | LINE FILTER | ATF1089 |
|  | L501 | AF CHOKE COIL | ATH1009 |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | C200 | FLM CAP. (0. 1 μ/250V) | ACE-507 |
|  | C201 | ELECTR. CAPACITOR | CEAS102M25 |
|  | C202 | CERAMIC CAPACITOR | CKCYF103Z50 |
|  | C203 | ELECTR. CAPACITOR | CEAS101M16 |
|  | C204 | ELECTR. CAPACITOR | CEAS100M50 |
|  | C205 | ELECTROLYTIC CAPACIT | CEAS102M50 |
| ⚠ | C206-209 | CKA (0. 01 μ/AC400V) | ACG1003 |
|  | C210 | ELECTR. CAPACITOR | CEAS101M25 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | R101 | RESISTOR(2. 2MΩ, 1/2W) | ACN-208 |
|  | R108, 111 | CARBON FILM RESISTOR | RD1/2PM270J |
| ⚠ | R116 | RESISTOR (2. 7Ω, 5W) | ACN1060 |
|  | R118 | CARBON FILM RESISTOR | RD1/4PM470J |
| ⚠ | R119 | RESISTOR (2. 7Ω, 5W) | ACN1060 |
|  | OTHER RESISTORS |  | RD1/8PM□□□J |

## DYNAMIC FOCUS ASSEMBLY (AWZ3992)

### COIL

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | L601 | COIL (7 μH) | ATL1057 |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | C901 | CAPACITOR | CFPHW103H3D |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | R801-803 | RESISTOR(100KΩ, 1/2W) | ACN1074 |
|  | R804 | METAL OXIDE RESISTOR | RS2PMF220J |

## AM-DEMOD ASSEMBLY (AWZ3993)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | IC1012 | TV SIF IC | LA7710 |
|  | Q1054 | TRANSISTOR | 2SC2668 |
|  | Q1060 | TRANSISTOR | 2SC1740S |
|  | Q1061 | TRANSISTOR | 2SC2668 |

### FILTERS AND COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | F1024 | SAW FILTER | ATF1115 |
|  | F1025 | FILTER | ATF-183 |
|  | L1018 | TUNING COIL | ATC-250 |
|  | L1021 | AXIAL INDUCTOR | LAU5R6K |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | C1042 | CERAMIC CAPACITOR | CKDYF103Z50 |
|  | C1043 | CERAMIC CAPACITOR | CKDYB102K50 |
|  | C1044 | CERAMIC CAPACITOR | CKPUYY103M16 |
|  | C1045 | CERAMIC CAPACITOR | CKDYF103Z50 |
|  | C1048 | ELECTR. CAPACITOR | CEAS100M50 |
|  | C1049 | ELECTR. CAPACITOR | CEAS100M25 |
|  | C1051 | ELECTR. CAPACITOR | CEAS220M25 |
|  | C1053 | ELECTR. CAPACITOR | CEAS010M50 |
|  | C1054 | CERAMIC CAPACITOR | CKDYF103Z50 |
|  | C1057 | CERAMIC CAPACITOR | CKCYB222K50 |
|  | C1062 | ELECTR. CAPACITOR | CEAS101M25 |
|  | C1063 | CERAMIC CAPACITOR | CKDYF103Z50 |
|  | C1064 | CERAMIC CAPACITOR | CCDCH270J50 |
|  | C1109 | ELECTR. CAPACITOR | CEAS010M50 |
|  | C1152 | ELECTR. CAPACITOR | CEAS470M25 |
|  | C1153 | CERAMIC CAPACITOR | CKDYB103K50 |
|  | C1154 | CERAMIC CAPACITOR | CKPUYY103M16 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | VR1012 | VR (10kΩ) | ACP1043 |
|  | OTHER RESISTORS |  | RD1/8PM□□□J |

## 4.5MHz B.P.F. ASSEMBLY (AWZ3994)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | Q1049, 1052 | TRANSISTOR | 2SC1740S |
|  | Q1056, 1057 | TRANSISTOR | 2SC1740S |

### FILTERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | F1022, 1023 | CERAMIC FILTER | ATF-166 |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | C1104 | CERAMIC CAPACITOR | CKDYF103Z50 |
|  | C1126 | CERAMIC CAPACITOR | CKDYB103K50 |
|  | C1140 | ELECTR. CAPACITOR | CEAS470M16 |
|  | C1141 | CERAMIC CAPACITOR | CKDYX104M25 |
|  | C1142 | CERAMIC CAPACITOR | CKDYF103Z50 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
|  | R1122 | CARBON FILM RESISTOR | RD1/4PMFL101J |
|  |  | OTHER RESISTORS | RD1/8PM□□□J |

## VIDEO-AUDIO ASSEMBLY (AWV1227)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC351 | REGULATOR IC | NJM7805FA |
| | IC352 | LOGIC IC | TC4066BP |
| | IC353 | TV IC | PA0028 |
| | IC354 | TV IC | PA0030 |
| | IC355 | C. T. I. IC | TDA4563 |
| | IC356 | TV IC | TA8659AN |
| | IC751 | AUDIO IC | TA7630P |
| | IC752 | AUDIO IC | TA8200AH |
| | Q351, 354 | TRANSISTOR | 2SC1740S |
| | Q356-358 | TRANSISTOR | 2SC1740S |
| | Q359 | TRANSISTOR | 2SA933S |
| | Q360-363 | TRANSISTOR | 2SC1740S |
| | Q364 | TRANSISTOR | 2SA933S |
| | Q365 | TRANSISTOR | RN1203 |
| | Q366 | TRANSISTOR | 2SA933S |
| | Q367 | TRANSISTOR | RN1203 |
| | Q368-371 | TRANSISTOR | 2SC1740S |
| | Q372 | TRANSISTOR | RN1203 |
| | Q373 | TRANSISTOR | 2SC1740S |
| | Q374, 375 | TRANSISTOR | 2SA933S |
| | Q376-378 | TRANSISTOR | 2SC1740S |
| | Q379, 380 | TRANSISTOR | 2SA933S |
| | Q381 | TRANSISTOR | 2SD1276A |
| | Q382 | TRANSISTOR | 2SC1740S |
| | Q383 | TRANSISTOR | 2SB950A |
| | Q384 | TRANSISTOR | 2SC1845 |
| | Q385 | TRANSISTOR | 2SC1740S |
| | Q386, 387 | TRANSISTOR | 2SA933S |
| | Q388-392 | TRANSISTOR | 2SC1740S |
| | Q393 | TRANSISTOR | 2SA933S |
| | Q394 | TRANSISTOR | RN1201 |
| | Q395, 396 | TRANSISTOR | 2SA933S |
| | Q397, 398 | TRANSISTOR | 2SC1740S |
| | Q399 | TRANSISTOR | 2SA933S |
| | Q400 | TRANSISTOR | 2SC1740S |
| | Q401-404 | TRANSISTOR | 2SA933S |
| | Q405-408 | TRANSISTOR | 2SC1740S |
| | Q409 | TRANSISTOR | 2SA933S |
| | Q410 | TRANSISTOR | 2SC1740S |
| | Q651, 652 | TRANSISTOR | 2SA933S |
| | Q653, 654 | TRANSISTOR | 2SC1740S |
| | Q655-657 | TRANSISTOR | 2SA933S |
| | Q658, 659 | TRANSISTOR | 2SC1740S |
| | Q660-662 | TRANSISTOR | 2SA933S |
| | Q663, 664 | TRANSISTOR | 2SC1740S |
| | Q665, 666 | TRANSISTOR | 2SA933S |
| | Q667-670 | TRANSISTOR | 2SC1740S |
| | Q671 | TRANSISTOR | 2SA933S |
| | Q672 | TRANSISTOR | 2SC1740S |
| | Q673 | TRANSISTOR | 2SA933S |
| | Q751-754 | TRANSISTOR | 2SC1740S |
| | Q757 | TRANSISTOR | 2SA933S |
| | Q758-760 | TRANSISTOR | 2SC1740S |
| | D351, 352 | DIODE | 1SS252 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | D353 | ZENER DIODE | HZS5BLL |
| | D354-357 | DIODE | 1SS252 |
| | D358 | ZENER DIODE | HZS5BLL |
| | D359-363 | DIODE | 1SS252 |
| | D364 | ZENER DIODE | RD9. 1ESB |
| | D365-367 | DIODE | 1SS252 |
| | D368 | ZENER DIODE | RD5. 1ESB3 |
| | D369 | ZENER DIODE | RD12ESB |
| | D370 | ZENER DIODE | RD5. 1ESB3 |
| | D371 | ZENER DIODE | RD6. 8ESB3 |
| | D372-378 | DIODE | 1SS252 |
| | D381, 382 | ZENER DIODE | RD6. 2ESB1 |
| | D383-386 | DIODE | 1SS252 |
| | D388 | DIODE | 1SS252 |
| | D390-392 | DIODE | 1SS252 |
| | D650, 651 | ZENER DIODE | RD4. 3ESB3 |
| | D652-663 | DIODE | 1SS252 |
| | D751 | DIODE | 11E2 |
| | D752, 753 | ZENER DIODE | RD6. 8ESB3 |
| | D754-765 | DIODE | 1SS252 |
| | D766 | ZENER DIODE | RD5. 6ESB |
| | D767-769 | DIODE | 1SS252 |

### COILS

| | | | |
|---|---|---|---|
| | L351, 352 | AXIAL INDUCTOR | LAU270K |
| | L353 | COIL | ATG1027 |
| | L354 | COIL | ATG1009 |
| | L355 | COIL | ATG1027 |
| | L356 | AXIAL INDUCTOR | LAU8R2K |
| | L357 | COIL | ATG1026 |
| | L358 | AXIAL INDUCTOR | LAU680K |
| | L359 | AXIAL INDUCTOR | LAU470K |
| | L360, 361 | AXIAL INDUCTOR | LAU330K |
| | L362 | COIL | ATG1033 |
| | L651-653 | AXIAL INDUCTOR | LAU6R8K |
| | L751, 752 | AF CHOKE COIL | ATH1009 |
| | L753 | AXIAL INDUCTOR | LAU6R8K |
| | L754-759 | FERRITE BEAD | ATX1008 |

### CAPACITORS

| | | | |
|---|---|---|---|
| | C351 | ELECTR. CAPACITOR | CEAS470M16 |
| | C352, 353 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C354 | ELECTR. CAPACITOR | CEAS470M16 |
| | C355 | ELECTR. CAPACITOR | CEAS100M50 |
| | C356 | ELECTR. CAPACITOR | CEAS221M16 |
| | C357 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C358 | ELECTR. CAPACITOR | CEAS470M50 |
| | C359 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C360 | ELECTR. CAPACITOR | CEAS101M16 |
| | C361 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C362 | ELECTROLYTIC CAPACIT | CEANPR47M50 |
| | C363, 364 | ELECTR. CAPACITOR | CEAS100M50 |
| | C365 | MYLAR FILM CAPACITOR | CQMA224J50 |
| | C366 | ELECTR. CAPACITOR | CEAS100M50 |
| | C367 | MYLAR FILM CAPACITOR | CQMA204J50 |
| | C368 | MYLAR FILM CAPACITOR | CQMA272J50 |
| | C369 | ELECTR. CAPACITOR | CEAS101M16 |
| | C370 | CERAMIC CAPACITOR | CKCYB103K50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C371 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C372 | ELECTR. CAPACITOR | CEAS470M16 |
| | C373 | ELECTR. CAPACITOR | CEAS100M50 |
| | C375 | CERAMIC CAPACITOR | CCCSL330J50 |
| | C376 | ELECTR. CAPACITOR | CEASR68M50 |
| | C377 | CERAMIC CAPACITOR | CCCSL221J50 |
| | C378 | CERAMIC CAPACITOR | CCCSL220J50 |
| | C379 | CERAMIC CAPACITOR | CCCSL820J50 |
| | C380 | CERAMIC CAPACITOR | CCCSL271J50 |
| | C381, 382 | CERAMIC CAPACITOR | CCCSL270J50 |
| | C383 | ELECTR. CAPACITOR | CEAS100M50 |
| | C384 | CERAMIC CAPACITOR | CCCSL470J50 |
| | C385 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C386 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C387 | ELECTR. CAPACITOR | CEAS220M25 |
| | C388 | ELECTR. CAPACITOR | CEAS101M10 |
| | C389 | ELECTR. CAPACITOR | CEAS010M50 |
| | C390 | ELECTR. CAPACITOR | CEAS220M25 |
| | C391 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C392 | CERAMIC CAPACITOR | CKCYB561K50 |
| | C393 | ELECTR. CAPACITOR | CEAS010M50 |
| | C394 | ELECTR. CAPACITOR | CEAS101M16 |
| | C395 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C396 | ELECTROLYTIC CAPACIT | CEAS6R8M50 |
| | C397 | ELECTR. CAPACITOR | CEAS100M50 |
| | C398 | CERAMIC CAPACITOR | CKCYB102K50 |
| | C399 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C400-402 | AUDIO FILM CAPACITOR | CFTXA104J50 |
| | C403 | ELECTR. CAPACITOR | CEAS101M16 |
| | C404 | CERAMIC CAPACITOR | CKPUYY103M16 |
| | C405-407 | AUDIO FILM CAPACITOR | CFTXA104J50 |
| | C408 | MYLAR FILM CAPACITOR | CQMA562K50 |
| | C409 | AUDIO FILM CAPACITOR | CFTXA224J50 |
| | C410 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C411 | CERAMIC CAPACITOR | CCCSL271J50 |
| | C412 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C413 | MYLAR FILM CAPACITOR | CQMA223K50 |
| | C414 | ELECTR. CAPACITOR | CEAS010M50 |
| | C415, 416 | CERAMIC CAPACITOR | CCCSL181J50 |
| | C417, 418 | CERAMIC CAPACITOR | CCCSL680J50 |
| | C419 | ELECTR. CAPACITOR | CEAS010M50 |
| | C420 | CERAMIC CAPACITOR | CCCCH220J50 |
| | C421 | ELECTR. CAPACITOR | CEASR47M50 |
| | C422, 423 | CERAMIC CAPACITOR | CKCYB471K50 |
| | C424 | CERAMIC CAPACITOR | CCCCH070D50 |
| | C425 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C426 | ELECTR. CAPACITOR | CEAS101M16 |
| | C427 | ELECTR. CAPACITOR | CEAS010M50 |
| | C428 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C429 | CERAMIC CAPACITOR | CCCCH080D50 |
| | C430 | CERAMIC CAPACITOR | CCCCH220J50 |
| | C431-433 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C434, 435 | MYLAR FILM CAPACITOR | CQMA563K50 |
| | C436 | CERAMIC CAPACITOR | CCCCH270J50 |
| | C437 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C438 | CERAMIC CAPACITOR | CCCCH820J50 |
| | C439 | ELECTR. CAPACITOR | CEANP2R2M50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C440 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C441 | CERAMIC CAPACITOR | CCCCH270J50 |
| | C442 | CERAMIC CAPACITOR | CCCCH330J50 |
| | C443 | MYLAR FILM CAPACITOR | CQMA563K50 |
| | C444 | CERAMIC CAPACITOR | CCCCH150J50 |
| | C445 | MYLAR FILM CAPACITOR | CQMA823K50 |
| | C446 | AUDIO FILM CAPACITOR | CFTXA394J50 |
| | C447 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C448 | ELECTR. CAPACITOR | CEAS010M50 |
| | C449 | CERAMIC CAPACITOR | CKCYB561K50 |
| | C450, 451 | CERAMIC CAPACITOR | CCCSL101J50 |
| | C452 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C453 | CERAMIC CAPACITOR | CCCCH270J50 |
| | C454 | ELECTR. CAPACITOR | CEAS470M16 |
| | C455 | ELECTR. CAPACITOR | CEANP2R2M50 |
| | C456-458 | ELECTR. CAPACITOR | CEAS222M25 |
| | C459 | ELECTR. CAPACITOR | CEAS100M50 |
| | C460 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C461 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C462 | ELECTR. CAPACITOR | CEAS330M50 |
| | C463 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C465 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C466 | ELECTR. CAPACITOR | CEAS222M16 |
| | C467, 468 | ELECTR. CAPACITOR | CEASR47M50 |
| | C469, 470 | CERAMIC CAPACITOR | CCCSL101J50 |
| | C471 | CERAMIC CAPACITOR | CCCSL680J50 |
| | C472, 473 | CERAMIC CAPACITOR | CCCSL820J50 |
| | C474, 475 | ELECTR. CAPACITOR | CEAS010M50 |
| | C476 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C477 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C478 | ELECTR. CAPACITOR | CEANP3R3M50 |
| | C479 | ELECTR. CAPACITOR | CEAS010M50 |
| | C480 | ELECTR. CAPACITOR | CEAS100M50 |
| | C481 | ELECTR. CAPACITOR | CEANP2R2M50 |
| | C482 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C483, 484 | CERAMIC CAPACITOR | CCCSL220J50 |
| | C485 | CERAMIC CAPACITOR | CKCYB331K50 |
| | C486 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C487 | ELECTR. CAPACITOR | CEAS470M16 |
| | C489 | CERAMIC CAPACITOR | CKCYB471K50 |
| | C651 | ELECTR. CAPACITOR | CEAS101M16 |
| | C652 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C653 | ELECTR. CAPACITOR | CEAS221M16 |
| | C654 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C655 | CERAMIC CAPACITOR | CKCYB391K50 |
| | C656 | CERAMIC CAPACITOR | CCCSL151J50 |
| | C657 | CERAMIC CAPACITOR | CCCSL101J50 |
| | C658 | CERAMIC CAPACITOR | CKCYB391K50 |
| | C659 | CERAMIC CAPACITOR | CCCSL121J50 |
| | C660 | CERAMIC CAPACITOR | CCCSL101J50 |
| | C661 | CERAMIC CAPACITOR | CCCSL121J50 |
| | C662 | CERAMIC CAPACITOR | CCCSL560J50 |
| | C663 | CERAMIC CAPACITOR | CCCSL101J50 |
| | C664 | ELECTR. CAPACITOR | CEAS100M50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C751, 752 | AUDIO FILM CAPACITOR | CFTXA154J50 |
| | C753 | ELECTR. CAPACITOR | CEAS470M10 |
| | C754, 755 | CERAMIC CAPACITOR | CKCYB562K50 |
| | C756 | AUDIO FILM CAPACITOR | CFTXA124J50 |
| | C757 | ELECTR. CAPACITOR | CEAS470M10 |
| | C758 | AUDIO FILM CAPACITOR | CFTXA124J50 |
| | C759 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C760-763 | ELECTR. CAPACITOR | CEAS470M10 |
| | C764 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C765 | ELECTR. CAPACITOR | CEAS222M16 |
| | C766 | ELECTR. CAPACITOR | CEAS470M10 |
| | C767, 768 | CERAMIC CAPACITOR | CKMYB561K50 |
| | C769 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C770 | ELECTR. CAPACITOR | CEAS100M50 |
| | C771, 772 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C773 | CERAMIC CAPACITOR | CKCYB102K50 |
| | C774 | ELECTROLYTIC CAPACIT | CEAS102M6 |
| | C775 | CERAMIC CAPACITOR | CKCYB102K50 |
| | C776 | ELECTROLYTIC CAPACIT | CEHAQ330M25 |
| | C777 | ELECTR. CAPACITOR | CEAS222M35 |
| | C778 | CERAMIC CAPACITOR | CKCYB102K50 |
| | C779 | ELECTROLYTIC CAPACIT | CEHAQ2R2M50 |
| | C780 | CERAMIC CAPACITOR | CKCYB102K50 |
| | C781 | ELECTROLYTIC CAPACIT | CEHAQ2R2M50 |
| | C782 | ELECTROLYTIC CAPACIT | CEHAQ330M25 |
| | C783 | ELECTR. CAPACITOR | CEAS222M35 |
| | C784, 785 | ELECTROLYTIC CAPACIT | CEHAQ470M50 |
| | C786, 787 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C788 | ELECTR. CAPACITOR | CEAS010M50 |
| | C789 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C790 | AUDIO FILM CAPACITOR | CFTXA124J50 |
| | C791, 792 | CERAMIC CAPACITOR | CCCSL221J50 |
| | C793 | AUDIO FILM CAPACITOR | CFTXA124J50 |
| | C794 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C795 | ELECTR. CAPACITOR | CEHAQ471M50 |
| | C796 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C799 | ELECTR. CAPACITOR | CEAS101M16 |
| | C800 | CERAMIC CAPACITOR | CKCYB102K50 |
| | C801, 802 | ELECTROLYTIC CAPACIT | ACH1216 |
| | C803 | ELECTR. CAPACITOR | CEAS010M50 |

## RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | VR351 | VR (100kΩ) | ACP1046 |
| | VR352 | VR (47kΩ) | ACP1045 |
| | VR353 | VR (100kΩ) | ACP1046 |
| | VR354 | VR (4.7kΩ) | VRTS6VS472 |
| | VR356 | VR (470Ω) | ACP1039 |
| | VR357 | VR (100Ω) | VRTS6VS101 |
| | VR651-653 | VR (470Ω) | ACP1039 |
| | R370 | CARBONFILM RESISTOR | RD1/2PMFL470J |
| | R438 | CARBON FILM RESISTOR | RD1/2PMFL4R7J |
| | R493 | CARBONFILM RESISTOR | RD1/2PM221J |
| | R535, 536 | METAL OXIDE RESISTOR | RS1LMF010J |
| | R547 | CARBON FILM RESISTOR | RD1/2PM472J |
| | R548 | CARBON FILM RESISTOR | RD1/2PM222J |
| | R561 | METAL OXIDE RESISTOR | RS2LMF010J |
| | R562-564 | CARBON FILM RESISTOR | RD1/2PMF101J |
| | R565 | CARBON FILM RESISTOR | RD1/4PM562J |
| | R568 | METAL OXIDE RESISTOR | RS3LMF3R9J |
| | R651 | CARBON FILM RESISTOR | RD1/2PM471J |
| | R659 | CARBON FILM RESISTOR | RD1/4PM221J |
| | R660 | CARBON FILM RESISTOR | RD1/2PM561J |
| | R676 | CARBON FILM RESISTOR | RD1/4PM221J |
| | R677 | CARBON FILM RESISTOR | RD1/2PM561J |
| | R696 | CARBON FILM RESISTOR | RD1/4PM221J |
| | R697 | CARBON FILM RESISTOR | RD1/2PM561J |
| | R707-709 | CARBONFILM RESISTOR | RD1/2PM221J |
| | R773, 774 | CARBONFILM RESISTOR | RD1/2PM152J |
| | R785 | CARBON FILM RESISTOR | RD1/4PMFL222J |
| | R795 | CARBON FILM RESISTOR | RD1/4PMFL220J |
| | R796, 797 | CARBON FILM RESISTOR | RD1/4PMFL101J |
| | R804, 805 | CARBON FILM RESISTOR | RD1/4PMFL2R2J |
| | | OTHER RESISTORS | RD1/8PM□□□J |

## OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | DL351 | FILTER | ATN1007 |
| | DL352 | FILTER | ATN1008 |
| | DL353 | FILTER | ATN1007 |
| | DL354 | DELAY LINE | ATN1014 |
| | DL355 | GLASS DELAY LINE | ATN1019 |
| | TH370 | THERMISTOR | TH101-2 |
| | TH370 | THERMISTOR | TH101-2 |
| | X1101 | CRYSTAL RESONATOR | ASS-041 |
| | X1102 | CERAMIC RESONATOR | ASS1003 |
| | X1103 | CRYSTAL RESONATOR | ASS-028 |

## MICROCOMPUTER ASSEMBLY (AWZ3995)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC301 | CONTROL MICROCOMPUTER | PD5173B9 |
| | IC302 | LOGIC IC | MC14051BCP |
| | IC303 | REGULATOR IC | NJM7805FA |
| | IC304 | SYSTEM RESET IC | MC34064P |
| | IC305 | REGULATOR IC | NJM7809A |
| | IC306 | OUTPUT EXPANDER IC | PD0012A |
| | IC307 | | X24C08P |
| | Q301 | TRANSISTOR | 2SA933S |
| | Q302 | TRANSISTOR | 2SC1740S |
| | Q303 | TRANSISTOR | 2SA933S |
| | Q304-310 | TRANSISTOR | 2SC1740S |
| | Q311-320 | TRANSISTOR | 2SA933S |
| | Q321-325 | TRANSISTOR | 2SC1740S |
| | Q326 | TRANSISTOR | 2SA933S |
| | Q327 | TRANSISTOR | 2SC1740S |
| | Q328 | TRANSISTOR | 2SA933S |
| | Q329-331 | TRANSISTOR | 2SC1740S |
| | Q333-335 | TRANSISTOR | 2SC1740S |
| | Q336 | TRANSISTOR | 2SA933S |
| | Q337-340 | TRANSISTOR | 2SC1740S |
| | Q341 | TRANSISTOR | 2SD438 |
| | Q342 | TRANSISTOR | 2SC1740S |
| | Q343 | TRANSISTOR | 2SA933S |
| | Q344-349 | TRANSISTOR | 2SC1740S |
| | Q350 | TRANSISTOR | 2SA933S |
| | Q352, 353 | TRANSISTOR | 2SC1740S |
| | Q354 | TRANSISTOR | 2SA933S |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | Q355 | TRANSISTOR | 2SC1740S |
| | Q356 | P-FET | 2SJ103 |
| | D301 | ZENER DIODE | RD5.6ESB3 |
| | D302-312 | DIODE | 1SS252 |
| | D314-317 | DIODE | 1SS252 |
| | D318 | ZENER DIODE | RD5.1ESB2 |
| | D319 | DIODE | 1SS252 |
| | D325 | ZENER DIODE | RD5.1ESB3 |
| | D326-330 | DIODE | 1SS252 |
| | D340 | DIODE | 1SS252 |

## CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C301, 302 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C303 | ELECTR. CAPACITOR | CEAS470M25 |
| | C304 | ELECTR. CAPACITOR | CEAS100M50 |
| | C305-307 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C308 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C309 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C310 | CERAMIC CAPACITOR | CKCYF472Z50 |
| | C311 | ELECTR. CAPACITOR | CEAS0R1M50 |
| | C312-316 | ELECTR. CAPACITOR | CEAS010M50 |
| | C317 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C318 | ELECTR. CAPACITOR | CEAS010M50 |
| | C319 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C320, 321 | ELECTR. CAPACITOR | CEAS470M25 |
| | C322, 323 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C324 | ELECTR. CAPACITOR | CEAS330M25 |
| | C326 | ELECTR. CAPACITOR | CEAS470M25 |
| | C327 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C328 | ELECTR. CAPACITOR | CEAS470M25 |
| | C329 | CERAMIC CAPACITOR | CKCYF472Z50 |
| | C330 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C331 | CERAMIC CAPACITOR | CKCYF472Z50 |
| | C332 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C333 | ELECTR. CAPACITOR | CEAS100M50 |
| | C334 | ELECTR. CAPACITOR | CEAS0R1M50 |
| | C335 | CERAMIC CAPACITOR | CKCYF472Z50 |
| | C336 | ELECTROLYTIC CAPACIT | CEHAQ101M25 |
| | C337 | ELECTR. CAPACITOR | CEAS010M50 |
| | C338 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C339 | ELECTR. CAPACITOR | CEAS470M25 |
| | C340 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C341 | ELECTR. CAPACITOR | CEAS470M25 |
| | C342 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C343 | CERAMIC CAPACITOR | CCCCH150J50 |
| | C343 | CERAMIC CAPACITOR | CCDCH150J50 |
| | C344 | CERAMIC CAPACITOR | CCCCH220J50 |
| | C345 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C346 | ELECTR. CAPACITOR | CEAS101M10 |
| | C347 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C348 | ELECTROLYTIC CAPACIT | CEHAQ101M25 |
| | C349 | CERAMIC CAPACITOR | CKCYF472Z50 |
| | C350 | ELECTR. CAPACITOR | CEAS101M10 |
| | C351, 352 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C353 | ELECTR. CAPACITOR | CEAS101M10 |
| | C361 | ELECTR. CAPACITOR | CEAS101M25 |
| | C362 | CERAMIC CAPACITOR | CKCYF472Z50 |
| | C363 | MYLAR FILM CAPACITOR | CQMA104K50 |
| | C364 | MYLAR FILM CAPACITOR | CQMA393K50 |
| | C365 | MYLAR FILM CAPACITOR | CQMA333K50 |
| | C370 | ELECTR. CAPACITOR | CEANP100M35 |

## RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | VR301 | VR (2.2kΩ) | ACP1041 |
| | R305, 307 | CARBONFILM RESISTOR | RD1/2PM122J |
| | R367, 368 | RESISTOR ARRAY(100K) | RA6S104J |
| | R373 | CARBON FILM RESISTOR | RD1/4PMFL3R3J |
| | R376 | CARBONFILM RESISTOR | RD1/2PMFL470J |
| | R395 | CARBON FILM RESISTOR | RD1/4PM151J |
| | R507 | CARBON FILM RESISTOR | RD1/2PMFL621J |
| | R509 | METAL OXIDE RESISTOR | RS2LMF3R9J |
| | | OTHER RESISTORS | RD1/8PM□□□J |

## OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | X201 | CERAMIC OSCILLATOR(4.19MHz) | ASS1022 |

# TUNER-NICAM ASSEMBLY (AWZ3996)

## SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC11 | LOGIC IC | TC4052BP |
| | IC13 | TV IC | M51365SP |
| | IC14 | MULTI VIF IC | M51419ASP |
| | IC15 | TV IC | SBX1475-11 |
| | IC201 | MULTISOUND PROCESSOR | MSP2400 |
| | IC202 | A/D CONVERTER FOR TV | ADC2301E |
| | IC203 | AUDIO MIXER FOR TV | AMU2481VS |
| | IC204-206 | OP-AMP IC | NJM4558DXP |
| | Q11-16 | TRANSISTOR | 2SC1740S |
| | Q17 | TRANSISTOR | 2SC2668 |
| | Q18 | TRANSISTOR | 2SC1740S |
| | Q19 | TRANSISTOR | 2SA933S |
| | Q21, 22 | TRANSISTOR | 2SC2668 |
| | Q25, 26 | TRANSISTOR | 2SC2668 |
| | Q28 | TRANSISTOR | RN1203 |
| | Q31 | TRANSISTOR | 2SC1740S |
| | Q32 | TRANSISTOR | 2SC2668 |
| | Q34 | TRANSISTOR | 2SC1740S |
| | Q35, 37 | TRANSISTOR | RN1203 |
| | Q39, 40 | TRANSISTOR | RN1203 |
| | Q43 | TRANSISTOR | 2SC2668 |
| | Q44-46 | TRANSISTOR | 2SC1740S |
| | Q50 | TRANSISTOR | 2SC1740S |
| | Q53-55 | TRANSISTOR | 2SC1740S |
| | Q58 | TRANSISTOR | 2SC1740S |
| | Q201, 202 | TRANSISTOR | 2SC1740S |
| | Q2000 | TRANSISTOR | 2SC1740S |
| | D11 | ZENER DIODE | RD33ESB2 |
| | D12-14 | DIODE | 1SS252 |
| | D15 | DIODE | ND487C1-3R |
| | D16-21 | DIODE | 1SS85 |
| | D23, 24 | DIODE | 1SS252 |
| | D26 | ZENER DIODE | RD10ESB2 |
| | D27 | DIODE | 1SS252 |
| | D28, 29 | DIODE | 1SS85 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | D201 | ZENER DIODE | RD3.9ESB |
| | D202-208 | DIODE | 1SS252 |
| | D2000-2003 | DIODE | 1SS252 |

## COILS, TRANSFORMERS AND FILTERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | F11 | FILTER | ATF1021 |
| | F12 | TRAP FILTER | ATF1053 |
| | F13 | TRAP FILTER | ATF1052 |
| | F18 | TRAP FILTER | ATF1051 |
| | F19 | TRAP FILTER | ATF1063 |
| | F20 | FILTER | ATF1020 |
| | F21 | SAW FILTER | ATF1114 |
| | F201 | COIL | ATG1049 |
| | L11-13 | AXIAL INDUCTOR | LAU2R2M |
| | L15 | AXIAL INDUCTOR | LAU5R6K |
| | L16 | OSC COIL | ATG1046 |
| | L17 | COIL | ATG1047 |
| | L19 | TUNING COIL | ATG1048 |
| | L20 | TUNING COIL | ATG1031 |
| | L22 | TUNING COIL | ATC-250 |
| | L23 | AXIAL INDUCTOR | LAU5R6K |
| | L28, 29 | AXIAL INDUCTOR | LAU5R6K |
| | L30 | TUNING COIL | ATC-250 |
| | L31 | AXIAL INDUCTOR | LAU5R6K |
| | L32 | TUNING COIL | ATG1030 |
| | L34, 35 | AXIAL INDUCTOR | LAU5R6K |
| | L36 | AXIAL INDUCTOR | LAU120K |
| | L37, 38 | AXIAL INDUCTOR | LAU5R6K |
| | L39 | AXIAL INDUCTOR | LAU3R3K |
| | L40 | AXIAL INDUCTOR | LAU2R2M |
| | L41 | AXIAL INDUCTOR | LAU1R5M |
| | L201, 202 | AXIAL INDUCTOR | LAU4R7J |
| | L203, 204 | FERRITE BEAD | ATX1008 |
| | L205 | AXIAL INDUCTOR | LAU4R7J |
| | L206 | FERRITE BEAD | ATX1008 |
| | L207 | AXIAL INDUCTOR | LAU150J |
| | L208 | AXIAL INDUCTOR | LAU100J |
| | L2000 | AXIAL INDUCTOR | LAU120J |
| | T11, 12 | TRANSFORMER | ATG1045 |

## CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C12, 13 | CERAMIC CAPACITOR | CCDSL470J50 |
| | C14 | CERAMIC CAPACITOR | CKDYX473M25 |
| | C15 | ELECTR. CAPACITOR | CEAS100M50 |
| | C16 | CERAMIC CAPACITOR | CKDYF472Z50 |
| | C17 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C18 | ELECTR. CAPACITOR | CEAS101M25 |
| | C19 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C20 | ELECTR. CAPACITOR | CEAS470M25 |
| | C21 | CERAMIC CAPACITOR | CKDYX473M25 |
| | C22 | CERAMIC CAPACITOR | CKDYF472Z50 |
| | C23 | CERAMIC CAPACITOR | CKDYX473M25 |
| | C24 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C25 | CERAMIC CAPACITOR | CKDYF472Z50 |
| | C26 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C27 | ELECTROLYTIC CAPACIT | CEAS471M25 |
| | C28 | ELECTROLYTIC CAPACIT | CEAS6R8M50 |
| | C29 | ELECTR. CAPACITOR | CEAS221M16 |
| | C30 | CERAMIC CAPACITOR | CKDYX473M25 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C31 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C32 | CERAMIC CAPACITOR | CKDYF472Z50 |
| | C33 | ELECTR. CAPACITOR | CEAS101M25 |
| | C34 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C35 | CERAMIC CAPACITOR | CKPUYY103M16 |
| | C36 | CERAMIC CAPACITOR | CCDLH220J50 |
| | C37 | CERAMIC CAPACITOR | CCDLH560J50 |
| | C38 | CERAMIC CAPACITOR | CCDSH100D50 |
| | C39 | CERAMIC CAPACITOR | CCDLH120J50 |
| | C40 | CERAMIC CAPACITOR | CCDCH050C50 |
| | C41 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C42 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C43 | ELECTR. CAPACITOR | CEAS470M25 |
| | C44 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C45 | CERAMIC CAPACITOR | CKCYX473M25 |
| | C46 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C47 | ELECTR. CAPACITOR | CEAS101M25 |
| | C48 | CERAMIC CAPACITOR | CKDYX473M25 |
| | C49 | CERAMIC CAPACITOR | CKPUYF473Z16 |
| | C50 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C51 | ELECTR. CAPACITOR | CEAS470M25 |
| | C52 | CERAMIC CAPACITOR | CCDCH040C50 |
| | C53 | CERAMIC CAPACITOR | CKPUYY103M16 |
| | C54 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C55 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C56 | CERAMIC CAPACITOR | CCDCH150J50 |
| | C58 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C59 | CERAMIC CAPACITOR | CCDCH050C50 |
| | C60 | CERAMIC CAPACITOR | CCDCH040C50 |
| | C65 | CERAMIC CAPACITOR | CCDCH020C50 |
| | C66 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C67 | CERAMIC CAPACITOR | CCDCH560J50 |
| | C68 | ELECTR. CAPACITOR | CEAS101M25 |
| | C69 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C70 | CERAMIC CAPACITOR | CCDCH040C50 |
| | C71 | CERAMIC CAPACITOR | CCDCH020C50 |
| | C72 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C73 | CERAMIC CAPACITOR | CCDCH040C50 |
| | C74 | CERAMIC CAPACITOR | CKPUYY103M16 |
| | C75 | CERAMIC CAPACITOR | CCDCH040C50 |
| | C76 | ELECTR. CAPACITOR | CEAS101M25 |
| | C77 | CERAMIC CAPACITOR | CCDCH020C50 |
| | C78 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C79 | CERAMIC CAPACITOR | CCDCH090D50 |
| | C80 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C81 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C82 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C83 | CERAMIC CAPACITOR | CCDCH050C50 |
| | C84 | CERAMIC CAPACITOR | CCDCH020C50 |
| | C85, 86 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C87 | CERAMIC CAPACITOR | CCDCH270J50 |
| | C88 | CERAMIC CAPACITOR | CCDSL221J50 |
| | C89 | CERAMIC CAPACITOR | CCDCH220J50 |
| | C90 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C91 | ELECTROLYTIC CAPACIT | CEAS0R1M50 |
| | C92 | CERAMIC CAPACITOR | CKDYB471K50 |
| | C93 | ELECTR. CAPACITOR | CEAS2R2M50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C94 | CERAMIC CAPACITOR | CKDYX153M16 |
| | C95 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C96 | ELECTR. CAPACITOR | CEASR47M50 |
| | C97 | ELECTR. CAPACITOR | CEAS010M50 |
| | C98 | CERAMIC CAPACITOR | CKDYB103K50 |
| | C99 | ELECTR. CAPACITOR | CEASR15M50 |
| | C100 | ELECTR. CAPACITOR | CEASR47M50 |
| | C101 | ELECTR. CAPACITOR | CEAS470M25 |
| | C102 | ELECTR. CAPACITOR | CEAS100M50 |
| | C103 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C104 | CERAMIC CAPACITOR | CKPUYF473Z16 |
| | C105, 106 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C107 | ELECTROLYTIC CAPACIT | CEAS471M25 |
| | C108 | CERAMIC CAPACITOR | CCDCH221J50 |
| | C110 | ELECTR. CAPACITOR | CEASR47M50 |
| | C111 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C112 | CERAMIC CAPACITOR | CCDRH270J50 |
| | C113 | ELECTR. CAPACITOR | CEASR47M50 |
| | C114, 115 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C116 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C117 | CERAMIC CAPACITOR | CKDYB102K50 |
| | C118 | ELECTR. CAPACITOR | CEAS010M50 |
| | C119 | ELECTR. CAPACITOR | CEAS470M25 |
| | C120 | ELECTR. CAPACITOR | CEAS100M50 |
| | C121 | ELECTR. CAPACITOR | CEAS470M25 |
| | C122 | ELECTR. CAPACITOR | CEANP2R2M50 |
| | C123 | CERAMIC CAPACITOR | CKDYF472Z50 |
| | C124 | CERAMIC CAPACITOR | CCDCH050C50 |
| | C125 | ELECTR. CAPACITOR | CEANP2R2M50 |
| | C126 | CERAMIC CAPACITOR | CKPUYF473Z16 |
| | C127 | CERAMIC CAPACITOR | CKDYF473Z50 |
| | C129 | ELECTR. CAPACITOR | CEAS470M25 |
| | C130 | CERAMIC CAPACITOR | CCDSL390J50 |
| | C131 | CERAMIC CAPACITOR | CKPUYB102K50 |
| | C132 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C134, 135 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C136 | CERAMIC CAPACITOR | CKDYB103K50 |
| | C137 | CERAMIC CAPACITOR | CKDYX104M25 |
| | C138-140 | ELECTR. CAPACITOR | CEAS470M25 |
| | C141, 142 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C143 | CERAMIC CAPACITOR | CKDYF472Z50 |
| | C144 | CERAMIC CAPACITOR | CCCSL151J50 |
| | C145 | CERAMIC CAPACITOR | CCDSL101J50 |
| | C146-148 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C149 | ELECTR. CAPACITOR | CEAS470M25 |
| | C150 | CERAMIC CAPACITOR | CCDCH030C50 |
| | C151-153 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C156 | CERAMIC CAPACITOR | CCCSL150J50 |
| | C157 | CERAMIC RESISTOR | CCCCH560J50 |
| | C158, 159 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C160 | CERAMIC CAPACITOR | CKPUYY103M16 |
| | C161 | CERAMIC CAPACITOR | CKDYF103Z50 |
| | C162 | CERAMIC CAPACITOR | CCDSL221J50 |
| | C163 | CERAMIC CAPACITOR | CCCSL820J50 |
| | C201 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C202 | CERAMIC CAPACITOR | CCCCH221J50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C203 | ELECTR. CAPACITOR | CEAS101M10 |
| | C204 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C205 | CERAMIC CAPACITOR | CKCYF472Z50 |
| | C206 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C207, 208 | CERAMIC CAPACITOR | CCDCH150J50 |
| | C209 | ELECTR. CAPACITOR | CEAS101M10 |
| | C210 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C211 | CERAMIC CAPACITOR | CKCYB561K50 |
| | C212 | MYLAR FILM CAPACITOR | CQMA562K50 |
| | C213 | ELECTR. CAPACITOR | CEASR33M50 |
| | C214 | CERAMIC CAPACITOR | CCCSL181J50 |
| | C215 | ELECTR. CAPACITOR | CEAS101M10 |
| | C216 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C217 | ELECTR. CAPACITOR | CEAS330M25 |
| | C218 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C219 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C220 | ELECTR. CAPACITOR | CEAS101M10 |
| | C221 | ELECTR. CAPACITOR | CEAS100M50 |
| | C222 | ELECTR. CAPACITOR | CEAS100M50 |
| | C223, 224 | CERAMIC CAPACITOR | CKCYB102K50 |
| | C225 | ELECTR. CAPACITOR | CEAS220M16 |
| | C226 | ELECTR. CAPACITOR | CEAS101M25 |
| | C227 | ELECTR. CAPACITOR | CEAS010M50 |
| | C228 | MYLAR FILM CAPACITOR | CQMA392J50 |
| | C229 | MYLAR FILM CAPACITOR | CQMA822J50 |
| | C230 | MYLAR FILM CAPACITOR | CQMA471J50 |
| | C231 | MYLAR FILM CAPACITOR | CQMA682J50 |
| | C232 | CERAMIC CAPACITOR | CKCYB331K50 |
| | C233 | MYLAR FILM CAPACITOR | CQMA223J50 |
| | C234 | CERAMIC CAPACITOR | CCCCH560J50 |
| | C235, 236 | ELECTR. CAPACITOR | CEAS010M50 |
| | C237 | MYLAR FILM CAPACITOR | CQMA392J50 |
| | C238 | MYLAR FILM CAPACITOR | CQMA822J50 |
| | C239 | MYLAR FILM CAPACITOR | CQMA471J50 |
| | C240 | MYLAR FILM CAPACITOR | CQMA682J50 |
| | C241 | CERAMIC CAPACITOR | CKCYB331K50 |
| | C242 | MYLAR FILM CAPACITOR | CQMA223J50 |
| | C243 | CERAMIC CAPACITOR | CCCCH560J50 |
| | C244 | ELECTR. CAPACITOR | CEAS010M50 |
| | C245 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C246 | ELECTR. CAPACITOR | CEAS100M50 |
| | C247 | CERAMIC CAPACITOR | CCCCH680J50 |
| | C250-253 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C254-257 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C258 | ELECTR. CAPACITOR | CEAS221M16 |
| | C259 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C261 | CERAMIC CAPACITOR | CCDCH560J50 |
| | C262 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C2000 | ELECTR. CAPACITOR | CEAS100M50 |
| | C2001 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C2002 | CERAMIC CAPACITOR | CCCCH390J50 |

## RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | VR11 | VR(22kΩ) | VRTS6VS223 |
| | VR13 | VR(4.7kΩ) | VRTS6VS472 |
| | VR14 | VR(1kΩ) | VRTS6VS102 |
| | VR17 | VR(100kΩ) | VRTS6VS104 |
| | R14 | METAL OXIDE RESISTOR | RS1LMF221J |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | R15 | CARBON FILM RESISTOR | RD1/2PMFL271J |
| | R24 | METAL OXIDE RESISTOR | RS1LMF3R3J |
| | R25 | CARBON FILM RESISTOR | RD1/4PMFL100J |
| | R27, 45 | CARBON FILM RESISTOR | RD1/4PMFL101J |
| | R57, 70 | CARBON FILM RESISTOR | RD1/4PMFL101J |
| | R126 | CARBON FILM RESISTOR | RD1/2PMFL330J |
| | R171 | CARBON FILM RESISTOR | RD1/4PMFL271J |
| | | OTHER RESISTORS | RD1/8PM□□□J |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | X12 | CERAMIC RESONATOR | ASS1063 |
| | X202 | CRYSTAL RESONATOR | ASS1035 |
| | | PLUG CORD | ADE-082 |
| | | TV FRONT END | AXF1053 |

## I/O-TEXT ASSEMBLY (AWZ3997)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC600, 601 | LOGIC IC | TC4066BP |
| | IC602 | T. TXT V PROCESSOR | SAA5191 |
| | IC603 | TELETEXT IC | SAA9042P/A |
| | IC604 | MEMORY IC | MB81464-12 |
| | IC1001 | AV SELECTOR IC | PA0040 |
| | IC1501 | OP AMP IC | RC4558DXP |
| | Q600-612 | TRANSISTOR | 2SC1740S |
| | Q614 | TRANSISTOR | 2SC1740S |
| | Q615, 616 | TRANSISTOR | 2SA933S |
| | Q617, 618 | TRANSISTOR | 2SC1740S |
| | Q1001-1003 | TRANSISTOR | 2SC1740S |
| | Q1004 | TRANSISTOR | 2SC3327 |
| | Q1005-1009 | TRANSISTOR | 2SC1740S |
| | Q1011 | TRANSISTOR | 2SC1740S |
| | Q1014, 1015 | TRANSISTOR | 2SC3327 |
| | Q1016 | TRANSISTOR | RN1201 |
| | Q1017, 1018 | TRANSISTOR | 2SC3327 |
| | D600-616 | DIODE | 1SS252 |
| | D617 | ZENER DIODE | RD4.3ESB |
| | D1001-1004 | DIODE | 1SS252 |

### COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | L600 | AXIAL INDUCTOR | LAU150K |
| | L601-604 | AXIAL INDUCTOR | LAU6R8K |
| | L605 | COIL | ATC1029 |
| | L1017 | AXIAL INDUCTOR | LAU220K |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C600 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C601 | ELECTR. CAPACITOR | CEAS470M16 |
| | C602 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C603 | ELECTR. CAPACITOR | CEAS220M16 |
| | C604 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C605 | ELECTR. CAPACITOR | CEAS470M16 |
| | C606 | MYLAR FILM CAPACITOR | CQMA154J50 |
| | C607 | CERAMIC CAPACITOR | CCCCH270J50 |
| | C608 | ELECTR. CAPACITOR | CEAS100M50 |
| | C609 | CERAMIC CAPACITOR | CCCCH150J50 |
| | C610 | CERAMIC CAPACITOR | CCCCH101J50 |
| | C611 | CERAMIC CAPACITOR | CCCCH271J50 |
| | C612 | MYLAR FILM CAPACITOR | CQMA223J50 |
| | C613 | MYLAR FILM CAPACITOR | CQMA471J50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C614 | CERAMIC CAPACITOR | CKCYB102K50 |
| | C615 | CERAMIC CAPACITOR | CCCCH150J50 |
| | C616 | CERAMIC CAPACITOR | CKCYB331K50 |
| | C617 | CERAMIC CAPACITOR | CCCCH070D50 |
| | C618 | MYLAR FILM CAPACITOR | CQMA102J50 |
| | C619 | CERAMIC CAPACITOR | CCCCH221J50 |
| | C620 | MYLAR FILM CAPACITOR | CQMA683J50 |
| | C621 | ELECTR. CAPACITOR | CEANP2R2M50 |
| | C622 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C623 | CERAMIC CAPACITOR | CKCYX223M25 |
| | C624 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C625 | ELECTR. CAPACITOR | CEAS101M16 |
| | C626 | MYLAR FILM CAPACITOR | CQMA473J50 |
| | C627 | MYLAR FILM CAPACITOR | CQMA103J50 |
| | C628 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C629, 630 | CERAMIC CAPACITOR | CCCCH101J50 |
| | C631 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C632, 633 | ELECTR. CAPACITOR | CEAS220M16 |
| | C634 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C635 | ELECTR. CAPACITOR | CEAS010M50 |
| | C636 | CERAMIC CAPACITOR | CCCCH270J50 |
| | C637 | ELECTROLYTIC CAPACIT | CEANP100M50 |
| | C638 | ELECTR. CAPACITOR | CEAS100M25 |
| | C639 | MYLAR FILM CAPACITOR | CQMA104J50 |
| | C640 | MYLAR FILM CAPACITOR | CQMA103J50 |
| | C641 | CERAMIC CAPACITOR | CCCCH101J50 |
| | C642 | CERAMIC CAPACITOR | CCCCH560J50 |
| | C643 | CERAMIC CAPACITOR | CCCCH220J50 |
| | C1002 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C1003, 1004 | ELECTR. CAPACITOR | CEJA010M50 |
| | C1012, 1013 | ELECTR. CAPACITOR | CEJA010M50 |
| | C1016, 1017 | ELECTR. CAPACITOR | CEJA010M50 |
| | C1018, 1019 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C1020 | ELECTR. CAPACITOR | CEAS102M10 |
| | C1023 | ELECTR. CAPACITOR | CEAS222M16 |
| | C1024 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C1025 | ELECTR. CAPACITOR | CEAS220M25 |
| | C1026 | ELECTR. CAPACITOR | CEAS101M16 |
| | C1027 | ELECTR. CAPACITOR | CEAS100M25 |
| | C1028, 1029 | ELECTR. CAPACITOR | CEAS010M50 |
| | C1030 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C1031, 1032 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C1033-1035 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C1036 | ELECTR. CAPACITOR | CEAS470M25 |
| | C1037 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C1039 | ELECTROLYTIC CAPACIT | CEJA470M16 |
| | C1040 | ELECTR. CAPACITOR | CEAS102M10 |
| | C1041, 1042 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C1043 | CERAMIC CAPACITOR | CKPUYY103M16 |
| | C1044, 1046 | ELECTR. CAPACITOR | CEAS470M25 |
| | C1047 | ELECTR. CAPACITOR | CEAS102M10 |
| | C1048 | ELECTR. CAPACITOR | CEAS010M50 |
| | C1049 | ELECTR. CAPACITOR | CEJA010M50 |
| | C1501, 1502 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C1503 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C1504 | ELECTR. CAPACITOR | CEAS470M25 |
| | C1505, 1506 | ELECTR. CAPACITOR | CEAS4R7M50 |
| | C1507 | ELECTR. CAPACITOR | CEAS470M16 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | R600 | METAL OXIDE RESISTOR | RS1LMF150J |
| | R1060 | CARBON FILM RESISTOR | RD1/4PMFL100J |
| | R1064, 1065 | CARBON FILM RESISTOR | RD1/4PM121J |
| | R1085 | CARBON FILM RESISTOR | RD1/4PM221J |
| | R1102 | CARBON FILM RESISTOR | RD1/4PM221J |
| | | OTHER RESISTORS | RD1/8PM□□□J |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | X600 | CRYSTAL RESONATOR | ASS1049 |
| | CN1008, 1010 | PLUG 14-P | AKM1048 |
| | CN1012 | PLUG 12-P | AKM-079 |

## SUB TEXT ASSEMBLY (AWZ3998)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC700 | | P8032AH |
| | IC701 | | PDN001A9 |
| | IC703 | LOGIC IC | TC74HC373AP |
| | Q700 | TRANSISTOR | 2SC1740S |
| | D704 | ZENER DIODE | RD3.6ESB |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C700 | ELECTR. CAPACITOR | CEAS220M16 |
| | C701 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C702 | ELECTR. CAPACITOR | CEAS470M16 |
| | C703 | CERAMIC CAPACITOR | CKCYX104M25 |
| | C704 | CERAMIC CAPACITOR | CKPUYF223Z25 |
| | C705, 706 | CERAMIC CAPACITOR | CCCCH270J50 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | ALL RESISTORS | RD1/8PM□□□J |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | X700 | CERAMIC RESONATOR | ASS1034 |
| | CN700 | CONNECTOR(7P) | KPC7 |

## Y-C SEPARATION ASSEMBLY (AWZ3999)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC901 | LOGIC IC | TC4052BP |
| | Q901 | TRANSISTOR | 2SC1740S |
| | Q902 | TRANSISTOR | 2SA933S |
| | Q903, 904 | TRANSISTOR | 2SC1740S |
| | Q905 | TRANSISTOR | 2SA933S |
| | Q906 | TRANSISTOR | 2SC1740S |
| | Q907-909 | TRANSISTOR | 2SA933S |
| | Q910-916 | TRANSISTOR | 2SC1740S |
| | Q971, 972 | TRANSISTOR | 2SC1740S |

### COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | L901 | AXIAL INDUCTOR | LAU470K |
| | L902 | TRAP COIL | ATG1008 |
| | L903 | AXIAL INDUCTOR | LAU270K |
| | L904, 905 | AXIAL INDUCTOR | LAU470K |
| | L906 | AXIAL INDUCTOR | LAU820K |
| | L907 | AXIAL INDUCTOR | LAU560K |
| | L908 | AXIAL INDUCTOR | LAU150K |
| | L909 | AXIAL INDUCTOR | LAU3R9K |
| | L910 | AXIAL INDUCTOR | LAU8R2K |
| | L911 | AXIAL INDUCTOR | LAU1R8M |
| | L912, 913 | AXIAL INDUCTOR | LAU3R9K |
| | L914 | AXIAL INDUCTOR | LAU8R2K |
| | L915 | AXIAL INDUCTOR | ATH1013 |
| | L916 | TUNING COIL | ATG1006 |
| | L971 | AXIAL INDUCTOR | LAU220K |
| | L972 | AXIAL INDUCTOR | LAU100K |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C901 | ELECTR. CAPACITOR | CEAS470M50 |
| | C902 | CERAMIC CAPACITOR | CCCCH270J50 |
| | C903 | CERAMIC CAPACITOR | CCCCH560J50 |
| | C904, 905 | CERAMIC CAPACITOR | CCCCH181J50 |
| | C906 | CERAMIC CAPACITOR | CKCYB102K50 |
| | C907 | CERAMIC CAPACITOR | CCCCH220J50 |
| | C908 | CERAMIC CAPACITOR | CCCCH330J50 |
| | C909 | CERAMIC CAPACITOR | CCCCH151J50 |
| | C910 | ELECTR. CAPACITOR | CEAS101M10 |
| | C911 | CERAMIC CAPACITOR | CCCCH221J50 |
| | C912 | CERAMIC CAPACITOR | CCCCH151J50 |
| | C913 | ELECTR. CAPACITOR | CEAS470M50 |
| | C914 | CERAMIC CAPACITOR | CCCCH151J50 |
| | C915 | CERAMIC CAPACITOR | CCCCH221J50 |
| | C916, 917 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C918 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C919 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C920, 921 | ELECTR. CAPACITOR | CEAS330M16 |
| | C922 | ELECTR. CAPACITOR | CEAS470M16 |
| | C923 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C924 | ELECTR. CAPACITOR | CEAS470M16 |
| | C925 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C971 | ELECTR. CAPACITOR | CEAS101M10 |
| | C972 | CERAMIC CAPACITOR | CCCCH390J50 |
| | C973 | CERAMIC CAPACITOR | CCCCH330J50 |
| | C974 | ELECTR. CAPACITOR | CEAS100M50 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | VR902 | VR (1kΩ) | ACP1040 |
| | | ALL RESISTORS | RD1/8PM□□□J |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | CN901 | CONNECTOR(9P) | KPC9 |
| | DL901 | GLASS DELAY LINE | ATN1011 |

## EXT. SP ASSEMBLY (AWZ4000)

### SWITCH

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | S251 | SLIDE SWITCH (SPEAKER SELECTOR) | ASH1001 |

### FILTERS AND COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | L251, 252 | LINE FILTER | ATF1090 |
| | L253-256 | FERRITE BEAD | ATX1008 |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C251 | CERAMIC CAPACITOR | CCCSL221J50 |
| | C252, 253 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C254 | CERAMIC CAPACITOR | CCCSL221J50 |
| | C255, 256 | CERAMIC CAPACITOR | CKCYB332K50 |
| | C257, 258 | CERAMIC CAPACITOR | CKCYF473Z50 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | R251-254 | CARBON FILM RESISTOR | RD1/4PMFL100J |
| | R255 | CARBONFILM RESISTER | RD1/8PM100J |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | CN251 | JUMPER CONNECTOR 6-P | KPC6 |
| | | SPEAKER TERMINAL 4-P | AKE-109 |

## SOUND TRAP ASSEMBLY (AWZ4001)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | Q23 | N-FET | 2SK246 |
| | Q24 | P-FET | 2SJ103 |
| | Q27 | TRANSISTOR | 2SC1740S |
| | Q29 | N-FET | 2SK246 |
| | Q30 | TRANSISTOR | 2SC1740S |
| | Q33 | TRANSISTOR | 2SA933S |

### FILTERS AND COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | F14 | CERAMIC TRAP | ATF-114 |
| | F15 | CERAMIC FILTER | ATF-172 |
| | F16 | CERAMIC FILTER | ATF1054 |
| | F17 | CERAMIC FILTER | ATF-174 |
| | L24 | AXIAL INDUCTOR | LAU100K |
| | L25 | AXIAL INDUCTOR | LAU2R2K |
| | L26 | AXIAL INDUCTOR | LAU4R7K |
| | L27 | AXIAL INDUCTOR | LAU3R3K |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C61 | ELECTR. CAPACITOR | CEAS100M50 |
| | C154 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C155 | ELECTROLYTIC CAPACIT | CEJA220M16 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | ALL RESISTORS | RD1/8PM☐☐☐J |

## FRONT ASSEMBLY (AWZ4002)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC851 | MCU | PD5136 |
| | Q852-854 | TRANSISTOR | 2SC1740S |
| | D851 | ZENER DIODE | RD3. 0ESB |
| | D852-855 | DIODE | 1SS252 |

### SWITCH

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | S851-866 | TACT SWITCH | ASG1034 |
| | | (POWER, PRESET MENU (ON/OFF, SET, SELECT/ADJ +, -)<br>FINE TUNE, TV SYSTEM, FACTORY ADJ, DPO, —••— /AV<br>MEM, ⊿ (+, -), CH-PR (+, -), CH/PR, ⇦) | |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C851 | AUDIO FILM CAPACITOR | CFTXA104J50 |
| | C852, 853 | CERAMIC CAPACITOR | CCCCH221J50 |
| | C854 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C855 | CERAMIC CAPACITOR | CGMYX103M16 |
| | C866 | CERAMIC CAPACITOR | CKMYF472Z50 |
| | C869 | ELECTR. CAPACITOR | CEAS101M10 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | R870 | CARBON FILM RESISTOR | RD1/2PMFL820J |
| | R876 | METAL OXIDE RESISTOR | RS1LMF331J |
| | | OTHER RESISTORS | RD1/8PM☐☐☐J |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | X851 | CERAMIC OSCILLATOR | ASS1043 |

## DPO ASSEMBLY (AWZ4003)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | Q851 | TRANSISTOR | 2SC1740S |
| | PC851 | CDS | U5C-08SC |
| | D856 | LED (RED, GREEN) | AEL-427 |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C867 | ELECTROLYTIC CAPACIT | CEJA330M16 |
| | C868 | ELECTROLYTIC CAPACIT | CEJA100M25 |
| | C870 | CERAMIC CAPACITOR | CCMSL121J50 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | VR851 | VR (47kΩ) | ACP1045 |
| | | OTHER RESISTORS | RD1/8PM☐☐☐J |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | DPO HOLDER | AMR2294 |
| | | REMOTE RECEIVER UNIT | AXX1010 |

## CONVERGENCE ASSEMBLY (AWZ4004)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC701 | REGULATOR IC | NJM78M05FAS |
| | IC702 | REGULATOR IC | UPC78L12J |
| | IC703 | REGULATOR IC | NJM79M05FA |
| | IC704 | REGULATOR IC | NJM79L15A |
| | IC705 | TV IC | PA0036 |
| | IC706 | LOGIC IC | TC4066BP |
| | IC707-709 | OP AMP | M5238LF |
| | IC710 | TV HIC | STK4277A-SL |
| | IC711 | LOGIC IC | TC4066BP |
| | Q751 | TRANSISTOR | 2SA933S |
| | Q752, 756 | TRANSISTOR | 2SC1740S |
| | Q757 | TRANSISTOR | 2SA933S |
| | Q758-760 | TRANSISTOR | 2SC1740S |
| | Q761 | TRANSISTOR | 2SA933S |
| | Q762-764 | TRANSISTOR | 2SC1740S |
| | Q765 | TRANSISTOR | 2SA933S |
| | Q766 | TRANSISTOR | 2SD1276A |
| | Q767 | TRANSISTOR | 2SB950A |
| | Q768 | TRANSISTOR | 2SA1306 |
| | Q769 | TRANSISTOR | 2SC3298 |
| | D701 | DIODE | 1SS252 |
| | D702 | ZENER DIODE | RD8. 2ESB |
| | D703-705 | DIODE | 1SS252 |
| | D706 | ZENER DIODE | RD5. 6ESB3 |
| | D708 | DIODE | 1SS252 |
| | D709 | ZENER DIODE | RD5. 6ESB3 |
| | D710, 711 | DIODE | 1SS252 |
| | D712 | ZENER DIODE | HZS12BL |
| | D713 | DIODE | 1SS252 |
| | D714, 715 | ZENER DIODE | UZ-27BSB |
| | D716-719 | DIODE | 1SS252 |
| | D720 | ZENER DIODE | UZ-27BSB |
| | D721, 722 | DIODE | 11DF2FD |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | D723 | ZENER DIODE | UZ-27BSB |
| | D724 | DIODE | 11E2 |
| | D725 | ZENER DIODE | UZ-27BSB |
| | D726 | DIODE | 11E2 |
| | D727-736 | ZENER DIODE | UZ-27BSB |
| | D737, 738 | DIODE | 1SS252 |

## CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C801, 802 | ELECTROLYTIC CAPACIT | CEHAQ330M35 |
| | C803 | ELECTR. CAPACITOR | CEHAQ010M50 |
| | C804, 805 | ELECTROLYTIC CAPACIT | CEHAQ101M10 |
| | C806 | MYLAR FILM CAPACITOR | CQMA821J50 |
| | C808 | ELECTR. CAPACITOR | CEAS010M50 |
| | C809 | ELECTR. CAPACITOR | CEAS100M50 |
| | C810 | ELECTR. CAPACITOR | CEHAQ010M50 |
| | C811 | CERAMIC CAPACITOR | CKCYF472Z50 |
| | C812 | MYLAR FILM CAPACITOR | CQMA124J50 |
| | C813 | MYLAR FILM CAPACITOR | CQMA683J50 |
| | C814, 815 | ELECTROLYTIC CAPACIT | CEHAQ330M35 |
| | C817 | CERAMIC CAPACITOR | CCCCH090D50 |
| | C818 | ELECTR. CAPACITOR | CEAS100M50 |
| | C819-821 | CERAMIC CAPACITOR | CKCYF222Z50 |
| | C823 | ELECTR. CAPACITOR | CEHAQ010M50 |
| | C824 | MYLAR FILM CAPACITOR | CQMA393J50 |
| | C825, 826 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C827 | ELECTR. CAPACITOR | CEHAQ010M50 |
| | C828 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C829 | ELECTR. CAPACITOR | CEAS100M50 |
| | C830 | MYLAR FILM CAPACITOR | CQMA332J50 |
| | C831 | MYLAR FILM CAPACITOR | CQMA224J50 |
| | C832, 833 | ELECTR. CAPACITOR | CEAS2R2M50 |
| | C834 | PL. STYRENE CAPACITOR | CQSA152J50 |
| | C835 | MYLAR FILM CAPACITOR | CQMA681J50 |
| | C836 | PL. STYRENE CAPACITOR | CQSA331J50 |
| | C837, 838 | CERAMIC CAPACITOR | CGMYX103M16 |
| | C839 | MYLAR FILM CAPACITOR | CQMA102J50 |
| | C840, 841 | ELECTROLYTIC CAPACIT | CEAS102M6 |
| | C842 | ELECTR. CAPACITOR | CEANP010M50 |
| | C843 | ELECTR. CAPACITOR | CEAS101M25 |
| | C844 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C845 | ELECTR. CAPACITOR | CEAS101M16 |
| | C846 | ELECTR. CAPACITOR | CEAS470M16 |
| | C847, 848 | ELECTR. CAPACITOR | CEAS100M50 |
| | C849-852 | CERAMIC CAPACITOR | CKCYX223M25 |
| | C853 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C854 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C855 | ELECTR. CAPACITOR | CEAS470M16 |
| | C856 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C857 | ELECTR. CAPACITOR | CEAS221M10 |
| | C858 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C859, 860 | ELECTR. CAPACITOR | CEHAQ100M50 |
| | C861 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C862 | ELECTR. CAPACITOR | CEAS221M10 |
| | C863 | ELECTR. CAPACITOR | CEHAQ221M35 |
| | C864 | CERAMIC CAPACITOR | CCMSL470J50 |
| | C865-868 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C869 | ELECTR. CAPACITOR | CEHAQ221M35 |
| | C870 | ELECTR. CAPACITOR | CEAS221M10 |
| | C871, 872 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C873 | ELECTR. CAPACITOR | CEAS221M10 |
| | C874, 875 | ELECTROLYTIC CAPACIT | CEHAQ471M35 |
| | C876 | ELECTROLYTIC CAPACIT | CEHAQ221M50 |
| | C877 | ELECTR. CAPACITOR | CEAS221M10 |
| | C878 | ELECTROLYTIC CAPACIT | CEHAQ221M50 |
| | C879 | CERAMIC CAPACITOR | CCMSL470J50 |
| | C880 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C881 | ELECTR. CAPACITOR | CEAS221M10 |
| | C882, 883 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C884, 885 | ELECTR. CAPACITOR | CEAS221M10 |
| | C886 | CERAMIC CAPACITOR | CCMSL470J50 |
| | C887, 888 | ELECTR. CAPACITOR | CEAS221M10 |
| | C889 | CERAMIC CAPACITOR | CCMSL470J50 |
| | C890-892 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C893 | CERAMIC CAPACITOR | CCMSL470J50 |
| | C894, 895 | CERAMIC CAPACITOR | CKCYF222Z50 |
| | C896 | MYLAR FILM CAPACITOR | CQMA103J50 |

## RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | VR701 | VR (22kΩ) | ACP1044 |
| | VR702 | VR (47kΩ) | ACP1045 |
| | VR704 | VR (220kΩ) | ACP1047 |
| | VR705 | VR (47kΩ) | ACP1045 |
| | VR706-709 | VR (4.7kΩ) | ACP1042 |
| | VR710 | VR (22kΩ) | ACP1044 |
| | VR711-748 | VR (4.7kΩ) | ACP1042 |
| | VR749 | VR (22kΩ) | ACP1044 |
| | VR750 | VR (4.7kΩ) | VRTS6VS472 |
| | R101 | METAL OXIDE RESISTOR | RS1LMF181J |
| | R102 | METAL OXIDE RESISTOR | RS3LMF271J |
| | R117 | CARBON FILM RESISTOR | RD1/4PM103J |
| | R126 | RESISTOR(4.7Ω, 10W) | RT10PD4R7K |
| | R128 | METAL OXIDE RESISTOR | RS1LMF680J |
| | R129 | METAL OXIDE RESISTOR | RS3LMF271J |
| | R132 | RESISTOR(4.7Ω, 10W) | RT10PD4R7K |
| | R147-149 | CARBON FILM RESISTOR | RD1/4PMF100J |
| | R150 | CARBON FILM RESISTOR | RD1/4PMFL181J |
| | R245, 246 | RESISTOR(75Ω, 7W) | ACN1084 |
| | R377-381 | METAL OXIDE RESISTOR | RS2LMF3R3J |
| | R386 | METALFILM RESISTER | RN1/4PC3301F |
| | | OTHER RESISTORS | RD1/8PM□□□J |

# ☆ HIGH VOLTAGE CONTROL ASSEMBLY (AWZ4005)

## SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | IC591, 592 | | RC4558DXP |
| | Q591, 592 | TRANSISTOR | 2SC2705 |
| | Q593 | TRANSISTOR | 2SC1740S |
| | D591, 592 | DIODE | 1SS252 |
| | D593 | ZENER DIODE | RD5.1ESB |
| | D594 | DIODE | 1SS252 |

## CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C651 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C652, 653 | ELECTR. CAPACITOR | CEAS010M50 |
| | C654 | CERAMIC CAPACITOR | CKCYB472K50 |
| | C655 | CERAMIC CAPACITOR | CCCSL101K500 |
| | C656 | CERAMIC CAPACITOR | CKCYF473Z50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C661 | CERAMIC CAPACITOR | CKCYB222K50 |
| | C662, 663 | MYLAR FILM CAPACITOR | CQMA102J50 |
| | C664 | CERAMIC CAPACITOR | CCCSL101K500 |
| | C665 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C666 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C667 | ELECTR. CAPACITOR | CEAS100M25 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | R851 | CARBONFILM RESISTOR | RD1/2PM471J |
| | R852 | CARBON FILM RESISTOR | RD1/2PM561J |
| × | R868 | METALFILM RESISTER | |
| × | R869 | METALFILM RESISTER | |
| × | R870 | METALFILM RESISTER | |
| | | OTHER RESISTOR | RD1/8PMS□□□J |

## AV1 ASSEMBLY (AWZ4006)

### COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | L1001, 1002 | AXIAL INDUCTOR | LAU560J |
| | L1005, 1006 | AXIAL INDUCTOR | LAU010J |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C1001 | ELECTR. CAPACITOR | CEAS220M25 |
| | C1021, 1022 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C1048 | CERAMIC CAPACITOR | CKCYF473Z50 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | ALL RESISTORS | RD1/8PM□□□J |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | CN1005 | SOCKET 18-P | AKP-049 |
| | CN1015 | CONNECTOR | AKP1003 |

## AV2 ASSEMBLY (AWZ4007)

### COILS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | L1003, 1004 | AXIAL INDUCTOR | LAU560J |
| | L1007-1012 | AXIAL INDUCTOR | LAU010J |
| | L1013-1016 | AXIAL INDUCTOR | LAU560J |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C1006 | ELECTROLYTIC CAPACIT | CEJA220M25 |
| | C1007 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C1008, 1009 | ELECTR. CAPACITOR | CEJA010M50 |
| | C1010 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C1011, 1014 | ELECTR. CAPACITOR | CEAS220M25 |
| | C1015 | CERAMIC CAPACITOR | CKCYF103Z50 |
| | C1049 | CERAMIC CAPACITOR | CKCYF473Z50 |
| | C1601-1606 | CERAMIC CAPACITOR | CKDYF103Z50 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | ALL RESISTORS | RD1/8PM□□□J |

### OTHERS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | CN1007, 1009 | SOCKET 14-P | AKP1056 |
| | CN1011 | SOCKET 12-P | AKP-047 |
| | CN1016 | CONNECTOR | AKP1003 |
| | CN1501, 1502 | DIN SOCKET(4P) | AKP1017 |
| | CN1503 | PIN JACK(11P) | AKB1030 |

## DEFLECTION PROTECT ASSEMBLY (AWV1232)

### SEMICONDUCTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | Q801-804 | TRANSISTOR | 2SA1145 |

### CAPACITORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C701 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C702 | CERAMIC CAPACITOR | CCCSL101K500 |
| | C703 | ELECTROLYTIC CAPACIT | CEHAQ330M16 |
| | C704 | CERAMIC CAPACITOR | CKCYB103K50 |
| | C705 | CERAMIC CAPACITOR | CCCSL101K500 |
| | C706 | ELECTROLYTIC CAPACIT | CEHAQ220M16 |
| | C707 | ELE. CAP. (33 $\mu$/160V) | ACH-370 |

### RESISTORS

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | R904 | METAL OXIDE RESISTOR | RS2PMF010J |
| | R912 | METAL OXIDE RESISTOR | RS3PMFR68J |
| | R917 | CARBON FILM RESISTOR | RD1/4PMFL470J |
| | | OTHER RESISTORS | RD1/8PM□□□J |

## MICROCOMPUTER-SUB ASSEMBLY (AWV1245)

See page 226.

# 7. ADJUSTMENTS

- The SD - T5000 conforms to the TV standard systems, M, B/G, I, D/K, L and L', and the color systems, NTSC, NTSC4.43, PAL and SECAM.
  Differences in adjustments between systems will be clarified in the following text.
  When the unit is used with a system after being adjusted for another system, the picture and sound may become abnormal. In this case, readjust the unit for the current system.
- It is strongly recommended to adjust the unit with the screen facing east or west.
- Adjustment items are described as follows.

7.1 FACTORY ADJ MODE
7.2 WHEN POWER SUPPLY-DEFLECTION ASSEMBLY IS REPAIRED
7.3 WHEN POWER SUPPLY-DEFLECTION ASSEMBLY IS REPLACED
7.4 WHEN Y-C SEPARATION ASSEMBLY IS REPAIRED
7.5 WHEN Y-C SEPARATION ASSEMBLY IS REPLACED
7.6 WHEN VIDEO-AUDIO ASSEMBLY IS REPAIRED
7.7 WHEN VIDEO-AUDIO ASSEMBLY IS REPLACED
7.8 WHEN TUNER-NICAM ASSEMBLY IS REPAIRED
7.9 WHEN TUNER-NICAM ASSEMBLY IS REPLACED
7.10 WHEN AM-DEMOD ASSEMBLY IS REPAIRED
7.11 WHEN AM-DEMOD ASSEMBLY IS REPLACED
7.12 WHEN CONVERGENCE ASSEMBLY IS REPAIRED OR REPLACED
7.13 WHEN MICROCOMPUTER ASSEMBLY IS REPAIRED
7.14 WHEN MICROCOMPUTER ASSEMBLY IS REPLACED
7.15 WHEN I/O-TEXT ASSEMBLY IS REPAIRED
7.16 WHEN I/O-TEXT ASSEMBLY IS REPLACED
7.17 WHEN DPO ASSEMBLY IS REPAIRED
7.18 WHEN DPO ASSEMBLY IS REPLACED
7.19 WHEN DYNAMIC FOCUS ASSEMBLY IS REPAIRED OR REPLACED
7.20 WHEN HIGH VOLTAGE CONTROL ASSEMBLY IS REPAIRED OR REPLACED
7.21 WHEN R, G OR B CRT DRIVE ASSEMBLY IS REPAIRED OR REPLACED
7.22 WHEN CRT ASSEMBLY R, G OR B IS REPLACED
7.23 WHEN LENS ASSEMBLY IS REPLACED
7.24 WHEN OTHER ASSEMBLIES ARE REPAIRED OR REPLACED
7.25 DPO BASE SETTING
7.26 DPO SENSITIVITY ADJUSTMENT
7.27 ANODE VOLTAGE MEASURING METHOD

- These adjustment procedures are described separately for adjustments following assembly exchange and adjustments following repairs.
- When replacing the assemblies, always use recommended replacements.
- Symbols in parentheses next to the adjustment position ( ) indicate denotes the relevant assembly to be adjusted.

D :POWER SUPPLY-DEFLECTION assembly
VR1 :Focus variable resistor
V :VIDEO-AUDIO assembly
A :AM-DEMOD assembly
C :CONVERGENCE assembly
M :MICROCOMPUTER assembly
T :TUNER-NICAM assembly
IC :IC15 in the TUNER-NICAM assembly
Y :Y-C SEPARATION assembly
I :I/O-TEXT assembly

- The adjustment points and TP terminals on each assemblies are shown in Fig. 7-17 thru 7-21.

Fig. 7-17:
VIDEO-AUDIO assembly, Y-C SEPARATION assembly and POWER SUPPLY-DEFLECTION assembly.

Fig. 7-18:
MICROCOMPUTER assembly, I/O-TEXT assembly, TUNER-NICAM assembly and AM-DEMOD assembly.

Fig. 7-19:
R, G, B CRT DRIVE assemblies and deflection yoke.

Fig. 7-20:
Lens assemblies (Red, Green, Blue).

Fig. 7-21:
CONVERGENCE assembly, front panel, FRONT assembly and focus variable resistor.

- Set the input terminals at the rear panel as follows unless otherwise noted.
  VIDEO signal : AV4 VIDEO terminal
  AUDIO signal : AV4 AUDIO terminal
- Set the picture quality to the standard by remote control unit unless otherwise noted.

## 7.1 FACTORY ADJ mode

### ● On FACTORY ADJ mode

FACTORY ADJ mode is activated/deactivated by pressing the S858 switch through the center small hole on the front control section with a stick or equivalent. (See Fig. 7 - 21.)
This FACTORY ADJ mode consists of ADJUSTMENT RANGE mode and ADJUSTMENT OFFSET mode. ADJUSTMENT RANGE mode is used to quickly check the variation of various picture and sound controls (COLOR, TINT, CONTR, BRITE, SHARP, BASS, TREBL, BALNC and CONVR) and ADJUSTMENT OFFSET mode is used to set the picture quality (for the PIONEER standard) when the user has defined the standard setting using the remote control.
When FACTORY ADJ mode is activated and an CNT-to-MIN-to-CNT or CNT-to-MAX-to-CNT operation is performed in ADJUSTMENT RANGE mode, all the AV memory values set by the user are cleared to "0" and the convergence position is reset to the center of the variable range. After deactivating the FACTORY ADJ mode, set the AV memory values and the convergence position again as required.

### ● How to use FACTORY ADJ mode

① ADJUSTMENT RANGE mode

When the S858 switch of the front control section (see Fig. 7 - 21) is pressed to activate the FACTORY ADJ mode, the screen shows ADJUSTMENT RANGE mode display as shown in Fig. 7 - 1 ①.
In this mode, the center (CNT), minimum (MIN) and maximum (MAX) points of the variable control ranges of the picture quality, sound quality and convergence position can be easily checked (without changing the current settings with the + ⊿ − keys).
To check, use the numeric keys on the remote control, which correspond to the picture and sound control functions as follows.

$\boxed{1}$ : COLOR
$\boxed{2}$ : TINT
$\boxed{3}$ : CONTR
$\boxed{4}$ : BRITE
$\boxed{5}$ : SHARP
$\boxed{7}$ : BASS
$\boxed{8}$ : TREBL
$\boxed{9}$ : BALNC
$\boxed{0}$ : CONVR(Convergence)

For example, when checking the variation of TINT, press the $\boxed{2}$ key of the remote control. Each time you press the $\boxed{2}$ key, CNT, MIN and MAX points are displayed cyclically in sequence.
Operate the other keys in the same manner for the respective items. (When checking the picture and sound controls, use a signal whose variations are easily recognized.)

Note::

- $\boxed{9}$ :When checking BALANC;
  CNT :For outputting both channels.
  MIN :For outputting R channel only.
  MAX :For outputting L channel only.
- $\boxed{0}$ :When checking CONVR;
  CNT :For the center position.
  MIN :For shifting to the upper right.
  MAX :For shifting to the lower left.

② ADJUSTMENT OFFSET mode (PIONNER standard setting mode)

By pressing the MUTE key of the remote control, the mode changes from ADJUSTMENT RANGE mode to ADJUSTMENT OFFSET mode as shown in Fig. 7 - 1 ②.
The picture adjustment (COLOR, TINT, CONTR, BRITE, SHARP) set in this mode will be that to be selected as the standard setting (PIONEER standard) using the remote control unit.
To set, select the item to adjust with the designated key or the numeric keys ( $\boxed{1}$ through $\boxed{5}$ ) and then adjust the selected item with the + ⊿ − keys according to the specified adjustment procedure. The reference set value is displayed on the lower right corner of the screen.

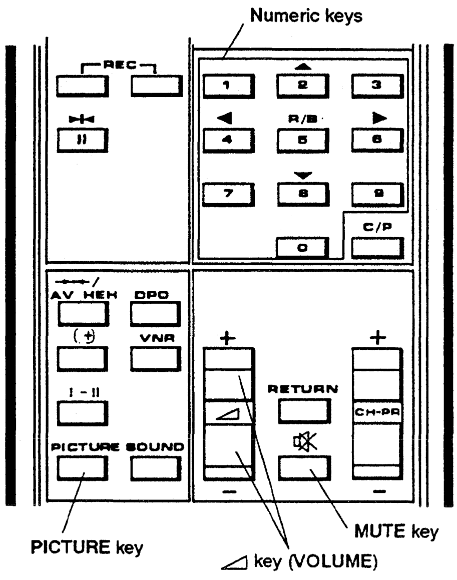
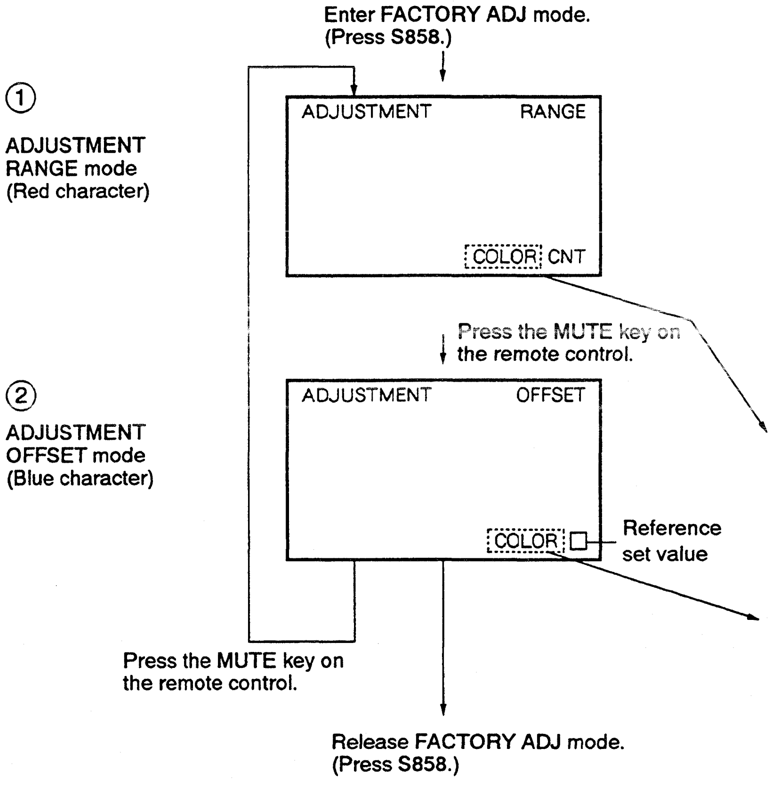

Numeric keys
REC
1
2
3
4
R/■
5
6
7
8
9
C/P
0
AV HEH
DPD
VNR
I - II
RETURN
CH-PR
PICTURE
SOUND
+
–
PICTURE key
MUTE key
◿ key (VOLUME)

Fig. 7-2
Key disposition of the remote control


Enter FACTORY ADJ mode.
(Press S858.)
①
ADJUSTMENT
RANGE mode
(Red character)
ADJUSTMENT
RANGE
COLOR CNT
Press the MUTE key on
the remote control.
②
ADJUSTMENT
OFFSET mode
(Blue character)
ADJUSTMENT
OFFSET
COLOR
Reference
set value
Press the MUTE key on
the remote control.
Release FACTORY ADJ mode.
(Press S858.)

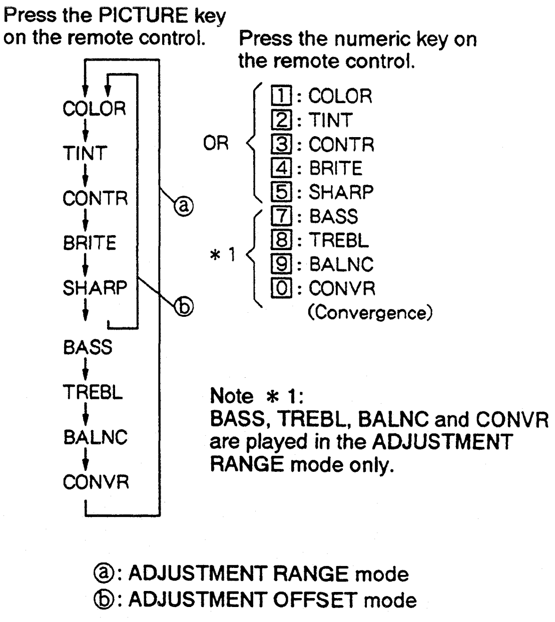

Press the PICTURE key
on the remote control.
Press the numeric key on
the remote control.
COLOR
TINT
CONTR
BRITE
SHARP
BASS
TREBL
BALNC
CONVR
ⓐ
ⓑ
OR
1 : COLOR
2 : TINT
3 : CONTR
4 : BRITE
5 : SHARP
* 1
7 : BASS
8 : TREBL
9 : BALNC
0 : CONVR
(Convergence)
Note * 1:
BASS, TREBL, BALNC and CONVR
are played in the ADJUSTMENT
RANGE mode only.
ⓐ: ADJUSTMENT RANGE mode
ⓑ: ADJUSTMENT OFFSET mode

Fig.7 - 1 Screen display of FACTORY ADJ mode

## 7.2 WHEN POWER SUPPLY-DEFLECTION ASSEMBLY IS REPAIRED

Note: VR591 and VR593 are protected by the shield covers (ANH1166) so that they can not be adjusted. Do not try to turn these volumes by removing their shield cover. (Otherwise, the sensitivity of the protection circuit against the X-ray and the anode voltage will be affected.)

- Adjustment test points (TP) are located in the POWER SUPPLY - DEFLECTION assembly.

### 7.2.1 Power Supply Section

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | 135V power supply adjustment | Monoscope signal | VR651(D) | Adjust the voltage of both sides of C741(POWER SUPPLY-DEFLECTION assembly) to 135V ± 1V. |

**• Each Output Voltages Check**

After performing +135V adjustment, confirm the each voltages as follows.

| Measuring Point | Voltage | Measuring Point | Voltage |
|---|---|---|---|
| E1 +13.5V (pin 9 or 10) for GND (pin 11) | +13.5V ± 0.5V | E2 +35V (pin 3 or 4) for GND (pin 1 or 2) | +32V ± 5V<br>(less than +40V) |
| E1 +8V (pin 7 or 8) for GND (pin 11) | $+8V^{+2V}_{-1V}$ | | |
| E1 +30V (pin 13) for GND (pin 11) | +30V ± 5V | E4 +25V(pin 5) for V.GND(pin 4 or 3) | +25V ± 3V |
| E1 +39V (pin 14) for GND (pin 11) | +39V ± 3V | E4 − 24V(pin 1) for V.GND(pin 4 or 3) | − 24V ± 3V |
| E5 H.T.+ (pin 4) for H.T. − (pin5) | +6.25V ± 0.25V | E5 +220V(pin 1) for TP554(GND) | +220V ± 20V |

### 7.2.2 Deflection Section

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | Focus adjustment | Cross hatch signal | Focus VR (VR1) | Optimize the focus of each CRT assembly. (Focus is easier to judge if red and blue are displaced by turning the convergence controls on the remote control as shown in Fig. 7- 13. Readjust these controls to their original positions after completing the focus adjustment.) |
| 2 | Horizontal size adjustment | Monoscope signal or ordinary broadcasting | VR592(D) | Adjust the right and left frames for the following values. When adjusting with ordinary broadcasting, adjust so that the does not blacken.<br>• With NTSC and NTSC 4.43: Right = 92.5 ± 2%, Left = 92 ± 2%<br>•With PAL and SECAM: Right = 94.5 ± 2%, Left = 93.5 ± 2%<br>After this adjustment, check the convergence, V. SIZE and H. BLK adjustments. |
| 3 | White balance adjustment | Ordinary broadcasting | Screen (VR1)<br>(R)<br>(B) | Adjust the white if proper adjustment cannot be achieved as follows. Set the COLOR by the remote control to minimum, adjust the screen VRs to obtain the best picture. |

## 7.3 WHEN POWER SUPPLY-DEFLECTION ASSEMBLY IS REPLACED

Note: As VR591 and VR593 in the POWER SUPPLY - DEFLECTION assembly supplied as a spare part are protected by the shield cover(ANH1166).
Never take off the shield cover(ANH1166).

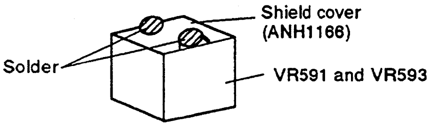


Fig. 7-3 Shield cover

### 7.3.1 Power Supply Section

- No adjustment required.

### 7.3.2 Deflection Section

- Adjust focus, horizontal size and white balance as described in section 7.2.2.

## 7.4 WHEN Y–C SEPARATION ASSEMBLY IS REPAIRED

- Adjustment for NTSC system only.

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | Comb filter adjustment | Color bar | VR902 (Y)<br>L916 (Y) | Adjust so that color signal elements at TP-YOUT(TP-903) in the Y-C SEPARATION assembly are reduced as much as possible. |
| 2 | Check for PIONEER standard | If the best picture is not obtained, adjust as described in section 7.6. | | |

## 7.5 WHEN Y–C SEPARATION ASSEMBLY IS REPLACED

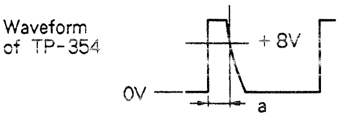
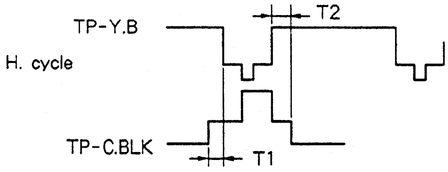
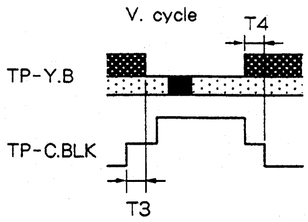
- No adjustment required.

## 7.6 WHEN VIDEO-AUDIO ASSEMBLY IS REPAIRED

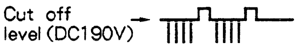
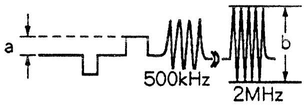
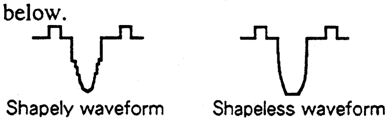
- Adjustment test points (TP) are located in the VIDEO-AUDIO assembly unless otherwise specified.
- Before the adjustment, check the comb filter adjustment as described in section 7.4. (for NTSC system only).

### 7.6.1. Adjustment Procedure

- Steps 5 and 6 are separately described in other tables. See sections 7.6.2 and 7.6.3.

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | V. SIZE adjustment<br>*1 | Monoscope signal | VR357 (V) | Adjust the upper and lower frames for the following values. When adjusting with ordinary broadcasting, adjust so that the picture does not blacken.<br>• With NTSC and NTSC 4.43<br>Upper :91% ± 3%<br>Lower :95% ± 3%<br>• With PAL and SECAM<br>Upper :92% ± 3%<br>Lower :94 ± 3%<br>After this adjustment, check the convergence and H. SIZE adjustments. |
| 2 | V. BLK width adjustment (1)<br>*1 | White 100% signal | VR354 (V) | Adjust the TP-V.BLK (TP-354) pulse width "a" so that it is the value specified below at the +8 V point.<br><br> <br>•NTSC and NTSC 4.43<br>a=1.2msec<br>•PAL<br>a=1.2msec ± 60 μ sec<br>•SECAM<br>a=1.2msec |
| 3 | H. BLK width adjustment | White 100% signal | VR352 (V) | While simultaneously observing TP-Y.B (TP-369) and TP-C.BLK(TP-366), adjust T1 in H cycle to the value specified below.After adjusting T1, check that T2 is the value specified below.<br>• With NTSC and NTSC 4.43<br>T1= 1.2 μ sec ± 200nsec<br>T2= 2.4 μ sec ± 400nsec<br>• With PAL and SECAM<br>T1= 1.0 μ sec ± 400nsec<br>T2= 1.8 μ sec ± 400nsec<br><br> |
| 4 | V. BLK width adjustment (2)<br>*1 | White 100% signal | VR351 (V)<br>VR353 (V) | Observing the V. cycle with the setting in step 3, adjust T3 to the value specified below. After adjusting T3, check that T4 is the value specified below.<br>① For the NTSC or NTSC4.43 system<br>Adjust T3 and T4 to the following values with VR351.<br>T3 = 300 μsec ± 50 μsec<br>T4 = 390 μsec ± 100 μsec<br>If a signal of the PAL or SECAM system is received after this adjustment, the set value ② (VR353) is deviated. Using the PAL or SECAM SG, adjust VR353 to obtain the value ② shown below.<br>② For the PAL or SECAM system<br>Adjust T3 and T4 to the following values with VR353.<br>T3 = 350 μsec ± 50 μsec<br>T4 = 500 μsec ± 100 μsec<br><br> |

*1: When the V.SIZE adjustment is performed, be sure to check the V.BLK adjustments (1) and (2).

| Step No. | Adjustment Item | | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|---|
| 5 | PAL system adjustement | | Adjust the glass delay line for PAL demodulator as described in section 7.6.2.<br>(Adjust for PAL system only.) | | |
| 6 | SECAM system adjustment | | Adjust the SECAM IDENT coil, detection coil and BELL FILTER as described in section 7.6.3.<br>(Adjust for SECAM system only.) | | |
| 7 | White balance adjustment | | Color bar signal without color signal | Screen VR (R),(B) (VR1) | Adjust the screen VRs (R) and (B)until grey color can just be seen in the color of dark area. (Do not move the green VR at this stage.) |
| | | | | VR651(R)<br>VR653(B) Drive VR (V) | Using the drive VR, adjust the color of bright area to white. |
| 8 | PIONEER Standard setting | Set to the PIONEER standard setting mode of FACTORY ADJ mode. (When adjustment is completed, resume the normal condition.) | | | |
| 9 | | Brightness adjustment | Cross hatch signal | COLOR(*2) | Minimize color by remote control. |
| | | | | BRITE(*2) | Adjust the cut off level at TP-RK of R. CRT DRIVE assembly to DC190V. (After adjustment, confirm the white balance.)<br> <br>(After this adjustment, adjust color as described in step No. 4). |
| 10 | | Sharpness adjustment | Multi burst | SHARP(*2) | At TP-G(TP-373), set the rate of b(peak-to-peak value at 2MHz) to a (level from black to white) as follows.<br>•With NTSC and NTSC 4.43<br>a : b = 2 : 2.7 (+2.6dB)<br>•With PAL<br>a : b = 2 : 2.6 (+2.3dB)<br>•With SECAM<br>a : b = 2 : 2.7 (+2.6dB)<br> |
| 11 | | Color adjustment | Color bar | COLOR(*2) | Adjust screen to the optimum condition. |
| 12 | | Tint adjustment (*3) | | TINT(*2) | Adjust screen to the optimum condition. |
| 13 | | Contrast adjustment | Free signal | CONTR(*2) | Adjust screen to the optimum condition. |
| 14 | | | | — | At the TP-BK of B. CRT DRIVE assembly, confirm that the signal is shaped as shown below.<br> |
| 15 | Blue tailing adjustment | | Cross signal | — | Adjust the SG output of the input cross signal to the maximum level. |
| | | | | | Maximize contrast by remote control. |
| | | | | VR652(V) | Turn VR652 fully counterclockwise (resulting in blue tailing). |
| | | | | | Turn the VR clockwise until there is no blue tailing at the vertical cross line on the screen. |

*2: Adjust by remote control.
*3: Adjust for NTSC and NTSC 4.43 only.

### 7.6.2 PAL System Adjustment

- This adjustment is separated from the table in 7.6.1 as it is to be performed only for the PAL system.
- The adjustment requires the DEM pattern.
- If the adjustment is not correctly performed, colors change at each scanning line, and this can be judged only by using the DEM pattern.

| Step No. | Adjustment item | Input signal | Adjustment point | Adjustment procedure |
|---|---|---|---|---|
| 5-1 | Adjustment of glass delay line for PAL demodulator. | PAL DEM pattern | — | Set oscilloscope as follows:H=2mS/div; V=100mV/div. Observe the waveforms at pin 60 (R-Y IN) and pin 62 (B-Y IN) of IC356. |
| 5-2 | | | L354 (V) | Adjust so that the waveform of the measuring area 1 in Fig. 7-5 (Fig. 7-6 a) appears as shown in Fig. 7-6 b. |
| 5-3 | | | VR356 (V) | Adjust so that the waveform of the measuring area 2 in Fig. 7-5 appears as shown in Fig. 7-6 c. |
| 5-4 | Repeat steps 5-2 and 5-3 until the optimum picture is obtained. (Adjust so that the measuring area 1 is set below 50mVp-p, and the measuring area 2 is set below 180mVp-p.) | | | |

| G − Y = 0 | | Y = 50 % | |
|---|---|---|---|
| △<br>+(R−Y) | △<br>−(R−Y) | □<br>+(B−Y) | □<br>−(B−Y) |
| △<br>+(R−Y) | △<br>−(R−Y) | □<br>±(B−Y) | □<br>∓(B−Y) |
| Reference Y = 50 % | | | |

NOTE ;
△ ; (B − Y) = 0
□ ; (R − Y) = 0

Fig. 7−4 DEM pattern

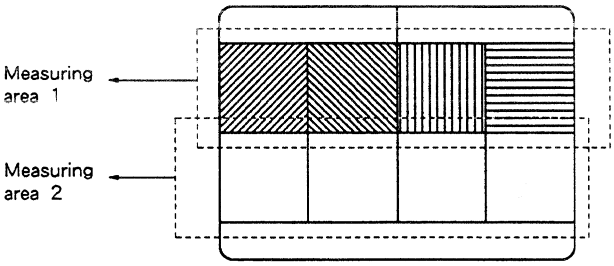
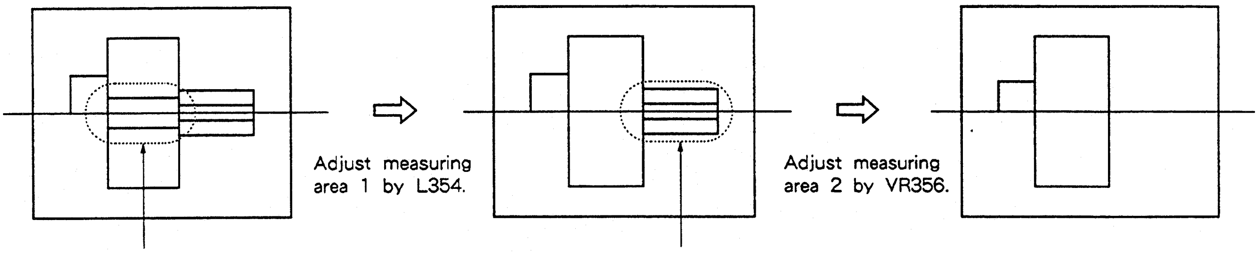


Fig. 7−5 Measuring area


Adjust measuring area 1 by L354.
Adjust measuring area 2 by VR356.

Waveform of measuring area 1

a.

Waveform of measuring area 2

b.

After adjustment

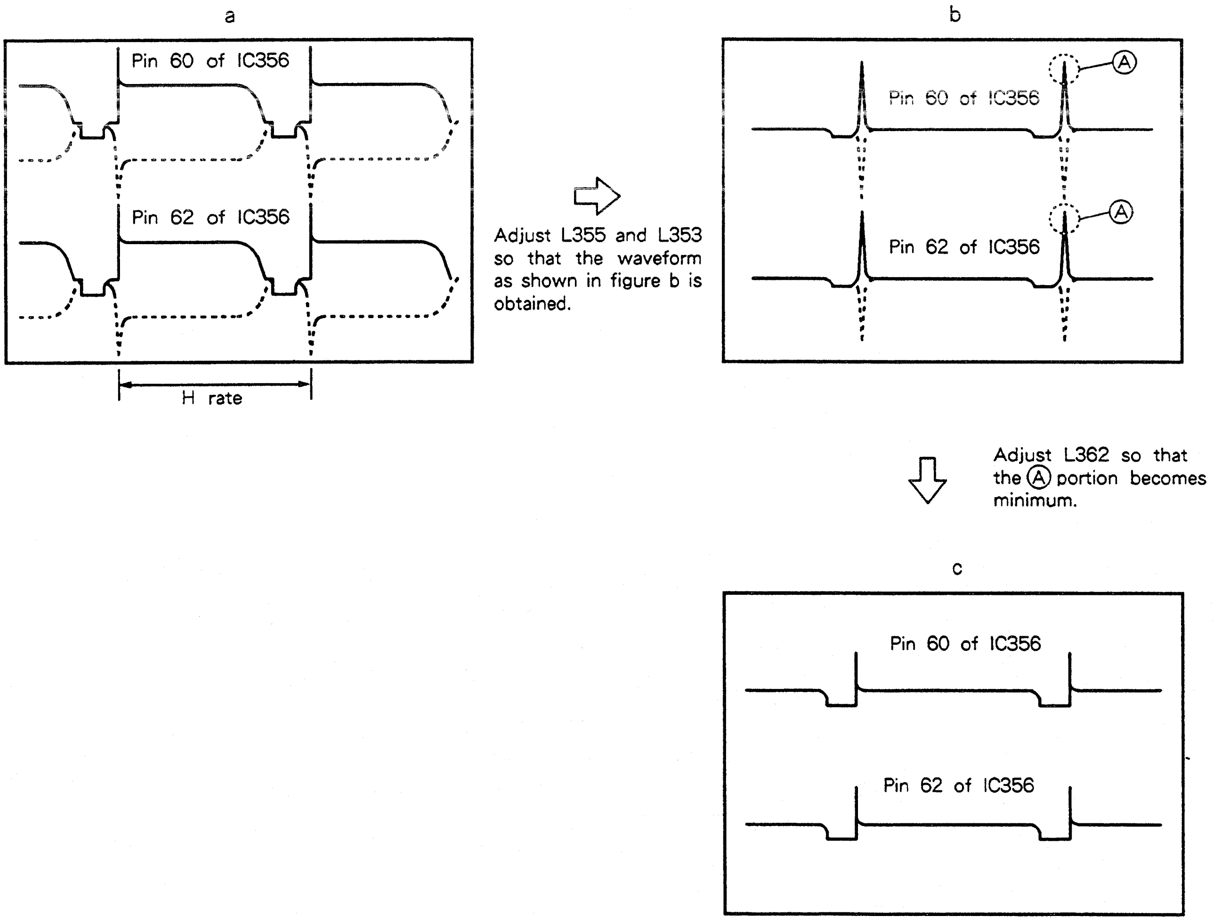
c.

Fig. 7−6 Oscilloscope screen

### 7.6.3 SECAM System Adjustment

- This adjustment is separated as it is to be performed only for the SECAM system.

| Step No. | Adjustment item | Input signal | Adjustment point | Adjustment procedure |
|---|---|---|---|---|
| 6-1 | SECAM identity adjustment | SECAM color bar | L357 (V) | Adjust so that the DC voltage at pin 23 of IC356 is maximum. |
| 6-2 | Detection coil and Bell filter adjustment | Black signal (including SECAM color carrier) | L355 (V):<br>Pin 60(R-Y IN)<br>L353 (V):<br>Pin 62(B-Y IN) | Adjust so that waveform appears as shown in Fig. 7-7 b at pin 60 (R-Y IN) and pin 62 (B-Y IN) of IC356. |
| 6-3 | | | L362 (V) | Adjust so that the waveform appears as shown in Fig. 7-7 c at pin 60 (R-Y IN) and pin 62 (B-Y IN) of IC356. |
| 6-4 | Repeat steps 6-2 to 6-3 until the optimum picture is obtained. Check to see that the color bars are displayed correctly on the screen after adjustment. | | | |



Adjust L355 and L353 so that the waveform as shown in figure b is obtained.

Adjust L362 so that the Ⓐ portion becomes minimum.

Fig. 7-7 SECAM detection coil adjustment

## 7.7 WHEN VIDEO-AUDIO ASSEMBLY IS REPLACED

- Before the adjustment, check the comb filter adjustment as described in section 7.4. (For NTSC system only).
- Perform the V. size adjustment, V. BLK width adjustment(1), H. BLK width adjustment, V. BLK width adjustment (2), white balance, PIONEER standard setting, and Blue tailing adjustment as described in section 7.6.

## 7.8 WHEN TUNER-NICAM ASSEMBLY IS REPAIRED

- Adjustment test points (TP) are located in the TUNER-NICAM assembly unless otherwise specified.

### 7.8.1 Tuner Section Adjustment

- The items to be adjusted here depend on the local TV standard systems. The systems for which the adjustments are required are shown in the respective rows of the table.
- For the necessary input signal, see Table 7-1. If not mentioned in the table, supply the signals to the antenna input terminal. Observe Fig. 7-9 when connecting.
- When receiving another TV system after performing the adjustments with the specified TV system, the reception condition may become insufficient. In this case, readjust with the current TV system or the best systems specified in Table 7-1.
- The trap adjustment in step 3 is separately described in another table. See section 7.8.2.
- This model is not equipped with the AFT (Automatic Fine Tuning) function.

Table 7-1

•Values shown for "fp" in the table are the reference values. Set for the nearest frequency and channel of those available in your servicing area.

| Signal No. | Signal Contents | Antenna input Level *2 | SG system setting *1 |
|---|---|---|---|
| ① | 33.4MHz unmodulated signal | 90 dBμV | L' |
| ② | 39.9 MHz unmodulated signal | 90 dBμV | |
| ③ | fp=119.25MHz, Color bar<br>Audio ; 1kHz, 100% MOD. monaural | 80 dBμV | Any of M, B, G, I, D, K, L and L' (B and G are the best.) |
| ④ | fp=196.25MHz, Multi burst<br>Audio ; 1kHz, 100% MOD. monaural | 58 dBμV | Any of M, B, G, I, D and K (B and G are the best.) |
| ⑤ | fp=175.25MHz, 100% white<br>Audio ; 1kHz, 100% MOD. stereo | 80 dBμV | |
| ⑥ | fp=487.25MHz, Color bar<br>Audio ; 400Hz, 100% MOD. monaural | 80dBμV | L |
| ⑦ | fp=55.25MHz, Color bar<br>Audio ; 1kHz, 100% MOD. ± 25kHz dev, monaural | 80 dBμV | M (US) |
| ⑧ | fp=67.25MHz, Cross hatch<br>Audio ; 300Hz, 30% MOD. stereo (L ch only) | 80 dBμV | |
| ⑨ | fp=175.25MHz, 10 steps<br>Audio ; 5kHz, 30% MOD. stereo (L ch only) | 80 dBμV | |

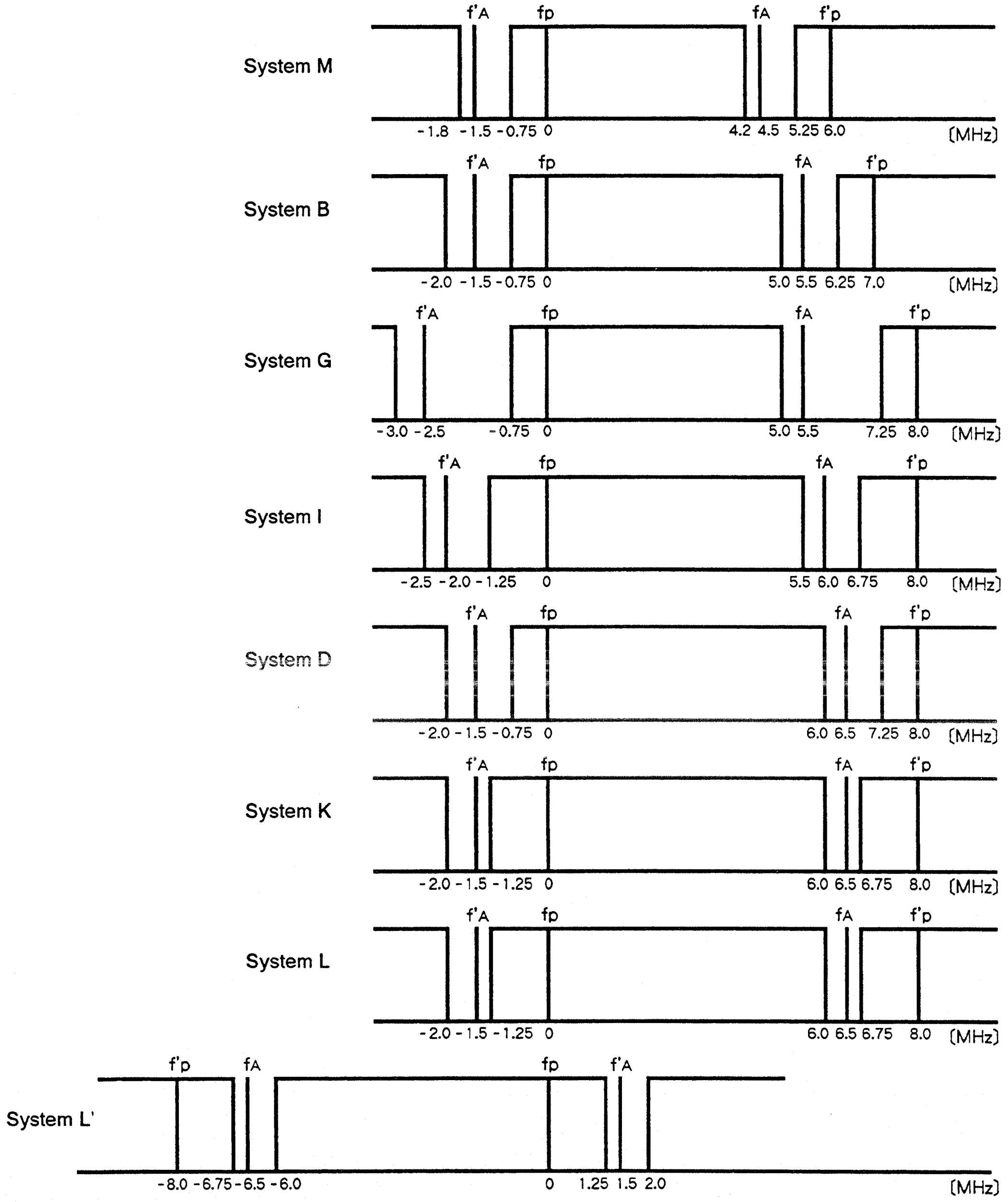
*1: Set the SG system to the local TV system.

*2:Set the SG audio level to a value lower than the antenna input level by the following value.

• System M : 6dB , • System B : 10dB , • System G : 10dB , • System I : 7dB , • System D :7dB ,
• System K : 7dB , • System L : 10dB , • System L' : 10dB

| Step No. | Adjustment Item | System for which the adjustment is required | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|---|
| 1 | L' OSC adjustment | L' | Signal① input to TP-IF IN (P-12) | L16 (T) | Adjust the frequency of TP-TRAP IN (P-23) to 38.9MHz ± 20kHz. (Use the spectrum analyzer.) |
| 2 | Balance circuit of the inverter circuit | | Signal② input to TP-IF IN (P-12) | VR11 (T) | Minimize the 39.9MHz element of TP-TRAP IN (P-23). (Use the spectrum analyzer.) |
| 3 | Trap adjustment | This adjustment depends the local TV system. See section 7.8.2. | | | |
| 4 | Video LLD adjustment | M, B/G, I, D/K, L, L' | Signal ③ | L22 (T) | Check that the color-bar signal is provided to TP-VIDEO (P-17). If not, adjust L22 to provide the color bar. |
| | | | | | Minimize the color signal element of TP-VIDEO (P-17). |
| 5 | AGC adjustment *1 | M, B/G, I, D/K, L, L' | Signal ④ | VR17 (T) | Adjust the DC voltage of TP-AGC (P-14) to 6.5V ± 0.3V. |
| 6 | Video level adjustment *1 | | Signal ⑤ | VR13 (T) | Adjust the output level of video signal at TP-VIDEO (P-17) to 2.2Vp-p ± 0.1V. |
| 7 | SECAM level adjustment | L, L' | Signal ⑥ | VR14 (T) | Adjust the video detection level at TP-VIDEO (P-17) to 2.2Vp-p ± 0.2V. |
| 8 | VCO adjustment | M, B/G, I, D/K | Signal ⑤ | L30 (T) | Check that the video signal (100% white ) is provided to TP-LOCK (P-20). If not, adjust the video signal. |
| 9 | | | | — | Measure the DC voltage of TP-APC (P-16) when TP-IF AGC (P-15) and TP-GND (P-11) are short circuited. |
| 10 | | | | L30 (T) | Release TP-IF AGC (P-15) and TP-GND (P-11) and adjust the DC voltage of TP-APC (P-16) to ± 100mV with respect to the value obtained in step 9. |
| 11 | US audio distortion adjustment | System M (US only) | Signal ⑦ | L32 (T) | Adjust to minimize the distortion of 1kHz sine-wave output to TP-A/L (P-21:L ch output terminal). |
| 12 | US stereo separation adjustment | | Signal ⑧ | RV03(IC) | Minimize the output of TP–A/L (P-21:L ch output terminal). |
| | | | Signal ⑨ | RV06(IC) | Minimize the output of TP–A/L (P-21:L ch output terminal). |

*1: When adjusting AGC and the video level in the L or L' system area, use SG of M, B, G, I, D or K (SG of B or G is best).
If these items are not adjusted properly, white saturation, noise or beat may be observed on the picture or the picture may be darkened.


System M
f'A
fp
fA
f'p
-1.8 -1.5 -0.75 0
4.2 4.5 5.25 6.0
(MHz)
System B
f'A
fp
fA
f'p
-2.0 -1.5 -0.75 0
5.0 5.5 6.25 7.0
(MHz)
System G
f'A
fp
fA
f'p
-3.0 -2.5
-0.75 0
5.0 5.5
7.25 8.0
(MHz)
System I
f'A
fp
fA
f'p
-2.5 -2.0 -1.25 0
5.5 6.0 6.75 8.0
(MHz)
System D
f'A
fp
fA
f'p
-2.0 -1.5 -0.75 0
6.0 6.5 7.25 8.0
(MHz)
System K
f'A
fp
fA
f'p
-2.0 -1.5 -1.25 0
6.0 6.5 6.75 8.0
(MHz)
System L
f'A
fp
fA
f'p
-2.0 -1.5 -1.25 0
6.0 6.5 6.75 8.0
(MHz)
System L'
f'p
fA
fp
f'A
-8.0 -6.75 -6.5 -6.0
0 1.25 1.5 2.0
(MHz)

**NOTE:** fp ;Video carrier
fA ;Audio carrier
f'p ;Upper adjacent video carrier
f'A ;Lower adjacent audio carrier
IF ;38.9(MHz)

Fig. 7 – 8 Relationship between the video and audio carrier frequencies of the TV system

### 7.8.2 Trap Adjustment

- This adjustment is separately described, as the adjustment procedure of the tuner section depends on the TV standard systems.
- For the signal to be input, see Table 7-2. Connect the signal to the antenna input terminal.
- Alternately adjust F13 and F19 for the optimum setting.

Table 7-2 Input signal

• Use the channel specified for the signal ①.

| Signal No. | Video | Audio | Antenna Input Level | Channel |
|---|---|---|---|---|
| Signal ① | Color bar | 1kHz, 100% MOD. | 80dB $\mu$V | Free channel. |
| Signal ② | | | | Next higher channel of the signal ①. |
| Signal ③ | | | | Next lower channel of the signal ①. |

Note:Set the SG audio level to a value lower than the antenna input level by the following value.
• System M : 6dB , • System B : 10dB , • System G : 10dB , • System I : 7dB , • System D : 7dB ,
• System K : 7dB , • System L : 10dB , • System L' : 10dB

### ● For System M

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 3-1 | Adjacent video trap adjustment | Signal ② | F12 (T) | Adjust the 32.9MHz element of TP-SAW IN (P-19) to a minimum. |
| 3-2 | Audio trap adjustment | Signal ① | F13, F19 (T) | Adjust the 34.4MHz element of TP-SAW IN (P-19) to a minimum. |
| 3-3 | Adjacent audio trap adjustment | Signal ③ | F18 (T) | Adjust the 40.4MHz element of TP-SAW IN (P-19) to a minimum. |

### ● For System B

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 3-1 | Adjacent video trap adjustment | Signal ② | F12 (T) | Adjust the 31.9MHz element of TP-SAW IN (P-19) to a minimum. |
| 3-2 | Audio trap adjustment | Signal ① | F13, F19 (T) | Adjust the 33.4MHz element of TP-SAW IN (P-19) to a minimum. |
| 3-3 | Adjacent audio trap adjustment | Signal ③ | F18 (T) | Adjust the 40.4MHz element of TP-SAW IN (P-19) to a minimum. |

### ● For System G

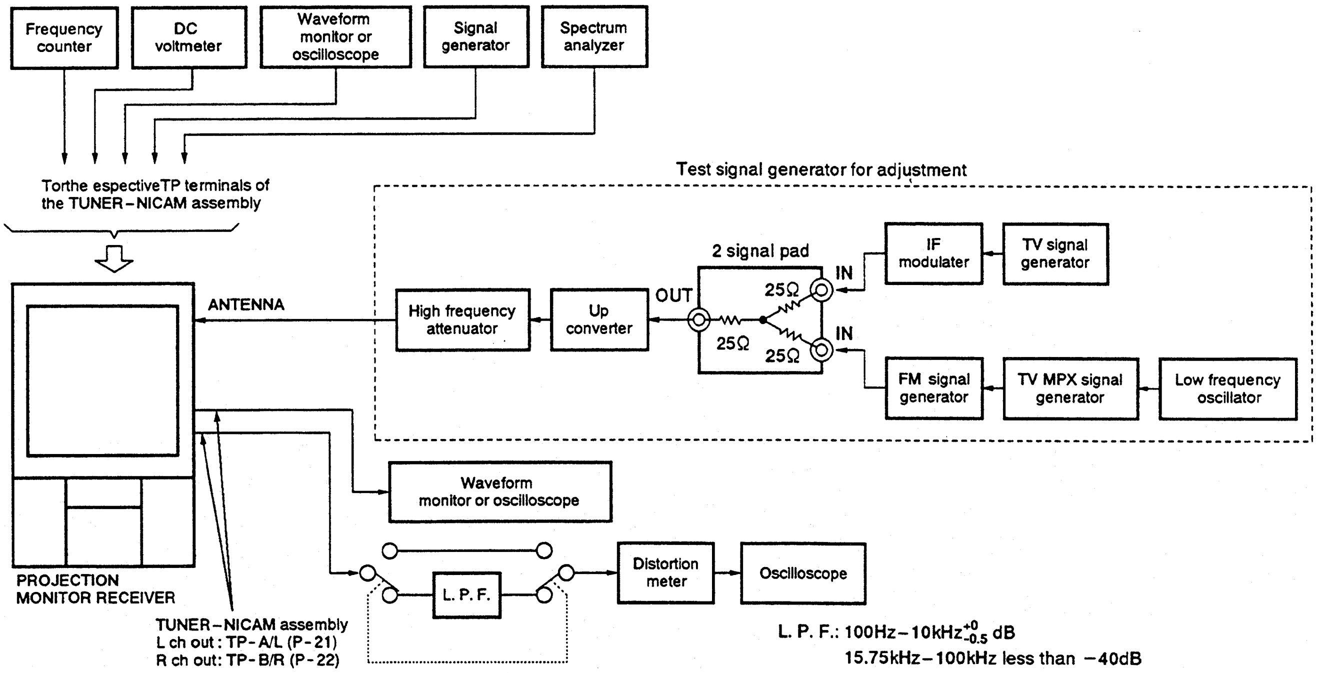
| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 3-1 | F12 adjustment | —— | F12 (T) | Adjust only when the picture is not displayed correctly. |
| 3-2 | Audio trap adjustment | Signal ① | F13, F19 (T) | Adjust the 33.4MHz element of TP-SAW IN (P-19) to a minimum. |
| 3-3 | F18 adjustment | —— | F18 (T) | Adjust only when the picture is not displayed correctly. |

## ● For system I

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 3-1 | Audio trap adjustment | Signal ① | F12 (T) | Adjust the 32.9MHz element of TP-SAW IN (P-19) to a minimum. |
| 3-2 | F13 and F19 adjustment | —— | F13, F19 (T) | Adjust only when the picture is not displayed correctly. |
| 3-3 | F18 adjustment | —— | F18 (T) | |

## ● For any of system D, K, L and L'

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 3-1 | Audio trap adjustment | Signal ① | F12 (T) | Adjust the 32.4MHz element of TP-SAW IN (P-19) to a minimum. |
| 3-2 | F13 and F19 adjustment | —— | F13, F19 (T) | Adjust only when the picture is not displayed correctly. |
| 3-3 | Adjacent audio trap adjustment | Signal ③ | F18 (T) | Adjust the 40.4MHz element of TP-SAW IN (P-19) to a minimum. |


Frequency counter
DC voltmeter
Waveform monitor or oscilloscope
Signal generator
Spectrum analyzer
Torthe espectiveTP terminals of the TUNER-NICAM assembly
Test signal generator for adjustment
ANTENNA
High frequency attenuator
Up converter
OUT
2 signal pad
25Ω
25Ω
25Ω
IN
IN
IF modulater
TV signal generator
FM signal generator
TV MPX signal generator
Low frequency oscillator
Waveform monitor or oscilloscope
L. P. F.
Distortion meter
Oscilloscope
PROJECTION MONITOR RECEIVER
TUNER-NICAM assembly
L ch out: TP-A/L (P-21)
R ch out: TP-B/R (P-22)

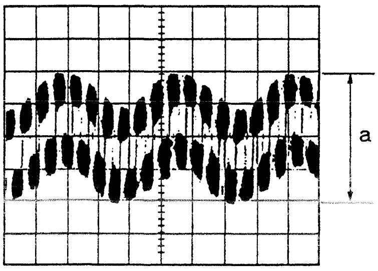
L. P. F.: 100Hz-10kHz$^{+0}_{-0.5}$ dB
15.75kHz-100kHz less than -40dB

Fig. 7-9 Connection diagram when adjusting the tuner section

### 7.8.3 NICAM Section Adjustment

- This adjustment is required only in the B/G CCIR audio multiplex area.
- Perform this adjustment after 7.8.1 Tuner Section Adjustment and 7.8.2 Trap Adjustment.

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | CCIR FM stereo adjustment | Free signal of B/G CCIR audio multiplex signal (STEREO or DUAL) | F201 (T) | Connect an oscilloscope to pin 8 of IC202 and observe the waveform (Fig. 7-10). Adjust the amplitude (Fig. 7-10 a) of waveform to a maximum. |



H : 5 µsec/div. , V : 100 mV/div.

Fig. 7-10 Waveform of pin 8 of IC202

Adjust " a " to a maximum.

Note : If it is not adjusted properly, a waveform having a smaller and flatter amplitude than that shown in Fig. 7-10 will be displayed.

## 7.9 WHEN TUNER-NICAM ASSEMBLY IS REPLACED

- No adjustment required.

## 7.10 WHEN AM-DEMOD ASSEMBLY IS REPAIRED

- This adjustment is required only for System L or L'.
- Adjustment test points (TP) are located in the AM-DEMOD assembly.

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | AM detection adjustment | Supply a channel of System L or L' to the antenna input terminal. The audio signal should be 1 kHz, 50% MOD, AM while there are no requirements for the video signal. | L1018 (A) | Adjust so that a sinewave of 1 kHz is output from pin 5 of IC1012 with minimum distortion and maximum level. |
| 2 | Audio level adjustment | | VR1012 (A) | Adjust so that the level of the sinewave of 1 kHz output from pin 5 of CN1016 is 200 mVrms ± 50 mV. |

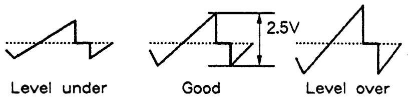
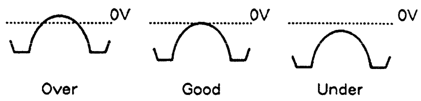
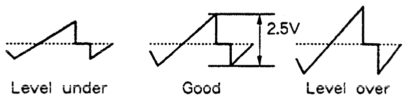
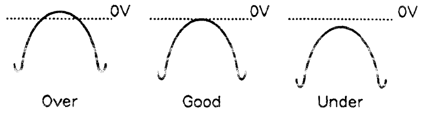
## 7.11 WHEN AM-DEMOD ASSEMBLY IS REPLACED

- No adjustment required.

## 7.12 WHEN CONVERGENCE ASSEMBLY IS REPAIRED OR REPLACED

### 7.12.1 PARABOLA WAVEFORM TOP LEVEL ADJUSTMENT

- Adjustment test point(TP)are located in the CONVERGENCE assembly.
- Perform this adjustment only when convergence is shifted.

| Step No. | Adjustment Item | Adjustment Point | Adjustment Procedure | |
|---|---|---|---|---|
| 1 | H SAWTOOTH WAVEFORM LEVEL | VR701 (C) | At TP-H.NOKO (P-805), set the level of output waveform to 2.5Vp-p. |  |
| 2 | TOP LEVEL OF H PARABOLA WAVEFORM | VR750 (C) | At TP-H.PARA (P-802), set the top level of output waveform to 0V ± 20mV. |  |
| 3 | V SAWTOOTH WAVEFORM LEVEL | VR702 (C) | At TP-V.NOKO (P-803), set the level of output waveform to 2.5Vp-p. |  |
| 4 | TOP LEVEL OF V PARABOLA WAVEFORM | VR749(C) | At TP-V.PARA (P-801), set the top level of output waveform to 0V ± 20mV. |  |

### 7.12.2 CONVERGENCE ADJUSTMENT

- Picture movement and adjustment points are summarized in Fig. 7-14 and 7-15.
- Input signal is the cross-hatch signal for PAL.
- Perform the position adjustment by remote control keys as follows. (Refer to Fig. 7-11.)
- After performing all adjustments, release the short-circuit to obtain white screen and perform the pre-adjustment.
- Correct the vertical line by horizontal correcting signal and correct the horizontal line by vertical correcting signal.
- Adjustment points are located in the CONVERGENCE assembly.

### ※1: Convergence Adjustment Screen and How to Operate.

Ⓐ : Each time the set switch of the front control section is pressed, the display switches screens from ② to ⑨.

Ⓑ : To switch from ADJ ↓ ↑ to ADJ ←→ : press 4 or 6 of the numeric keys on the remote control unit.

Ⓑ' : To switch from ADJ ←→ to ADJ ↓ ↑ : press 2 or 8 of the numeric keys on the remote control unit.

Ⓒ : With the ADJ ↓ ↑ screen, the display switches from screen ③, ⑤, ⑦ to ⑨ when you press 5 of the numeric keys on the remote control unit.

Ⓒ' : With the ADJ ←→ screen, the display switches from screen ②, ④, ⑥ to ⑧ when you press 5 of the numeric keys on the remote control unit.

| | |
|---|---|
| Red horizontal adjustment | : With screen ② or ⑥, press **2** (upper) or **8** (lower) of the numeric keys on the remote control unit or the **SELECT/ADJ** switch on the main unit. |
| Red vertical adjustment | : With screen ③ or ⑦, press **4** (left) or **6** (right) of the numeric keys on the remote control unit or the **SELECT/ADJ** switch on the main unit. |
| Blue horizontal adjustment | : With screen ④ or ⑧, press **2** (upper) or **8** (lower) of the numeric keys on the remote control unit or the **SELECT/ADJ** switch on the main unit. |
| Blue vertical adjustment | : With screen ⑤ or ⑨, press **4** (left) or **6** (right) of the numeric keys on the remote control unit or the **SELECT/ADJ** switch on the main unit. |

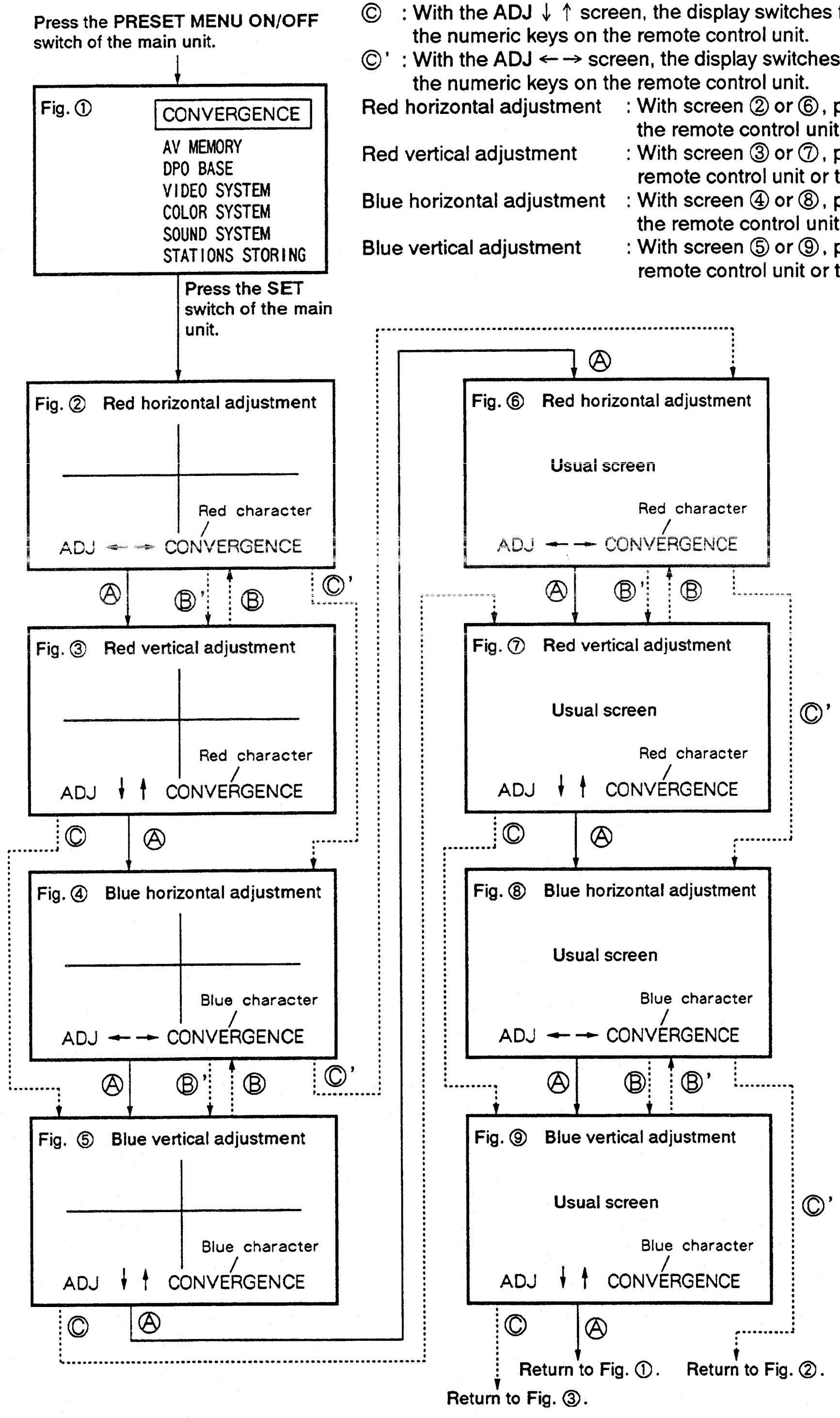

Press the **PRESET MENU ON/OFF** switch of the main unit.
Fig. ①
CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING
Press the **SET** switch of the main unit.
Fig. ② Red horizontal adjustment
Red character
ADJ ←→ CONVERGENCE
Fig. ③ Red vertical adjustment
Red character
ADJ ↓↑ CONVERGENCE
Fig. ④ Blue horizontal adjustment
Blue character
ADJ ←→ CONVERGENCE
Fig. ⑤ Blue vertical adjustment
Blue character
ADJ ↓↑ CONVERGENCE
Fig. ⑥ Red horizontal adjustment
Usual screen
Red character
ADJ ←→ CONVERGENCE
Fig. ⑦ Red vertical adjustment
Usual screen
Red character
ADJ ↓↑ CONVERGENCE
Fig. ⑧ Blue horizontal adjustment
Usual screen
Blue character
ADJ ←→ CONVERGENCE
Fig. ⑨ Blue vertical adjustment
Usual screen
Blue character
ADJ ↓↑ CONVERGENCE
Ⓐ
Ⓑ
Ⓑ'
Ⓒ
Ⓒ'
Return to Fig. ①.
Return to Fig. ②.
Return to Fig. ③.

Fig. 7-11 Key operation on the convergence screen

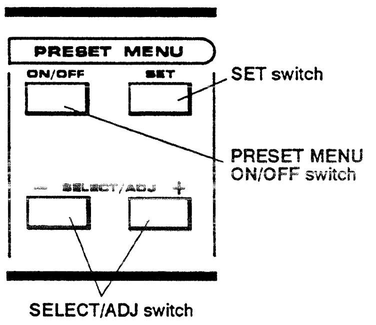

PRESET MENU
ON/OFF
SET
SET switch
PRESET MENU ON/OFF switch
— SELECT/ADJ +
SELECT/ADJ switch

Fig. 7-12
Key disposition of the main unit

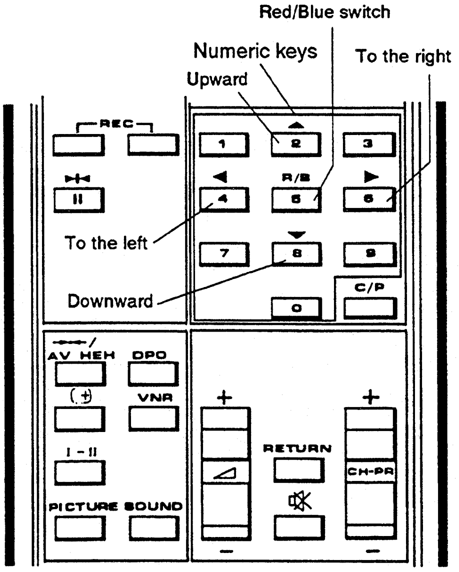

Red/Blue switch
Numeric keys
To the right
Upward
REC
1
2
3
R/B
4
5
6
To the left
7
8
9
Downward
0
C/P
AV HEH
DPO
VNR
I-II
RETURN
CH-PR
PICTURE
SOUND
+
−

Fig.7-13
Key disposition of the remote control

### (1) GREEN LINE ADJUSTMENT

- Since the green lines are used as a reference when adjusting red and blue, be sure to adjust them accurately.
- Short-circuit TP-R (TP-375), TP-B (TP-374) and TP-GND (TP-377) in the VIDEO-AUDIO assembly, then green lines appear on the screen. Release the short-circuit after green line adjustment.

| Step No. | Adjustmen Item | Adjustment Point | Adjustment Procedure |
|---|---|---|---|
| 1 | GH-PIN | VR705 (C) | Adjust the green line to a straight line(refer to Fig. 7-14 and 7-15). |
| 2 | GH-KEY | VR704 (C) | |
| 3 | GV-SKEW | VR706 (C) | |
| 4 | GV-BOW | VR707 (C) | |
| 5 | GV-KEY | VR708 (C) | |
| 6 | GV-S-KEY | VR709 (C) | |
| 7 | GV-PIN | VR710 (C) | |
| 8 | Repeat steps 1 thru 7 until the best possible picture is obtained. | | |

## (2) RED LINE ADJUSTMENT

- Short-circuit TP-B (TP-374) and TP-GND (TP-377) in the VIDEO-AUDIO assembly, then green lines and red lines appear on the screen. Release the short-circuit after red line adjustment.
- Adjust each VR so that the red lines converge with the green lines to obtain yellow lines.
- After adjustmet, perform fine-adjustment by observing the overall screen.

### ● Red Horizontal Distortion Compensation Adjustment

| Step No. | Adjustment Item | Adjustment Point | Adjustment Procedure |
|---|---|---|---|
| 1 | RH-SKEW | VR711 (C) | Adjust the red vertical lines in the center of the screen to straight lines without distortion and lean. (Refer to Fig. 7-14.) |
| 2 | RH-BOW | VR712 (C) | |
| 3 | Repeat steps 1 and 2. | | |
| 4 | RH-KEY | VR713 (C) | Adjust the red vertical lines in the right and left section of the screen to straight lines without lean. (Refer to Fig. 7-14.) |
| 5 | RH-S-KEY | VR714 (C) | |
| 6 | Repeat steps 4 and 5. | | |
| 7 | RH-PIN | VR715 (C) | Adjust the red vertical lines in the right and left sections of the screen to straight lines without distortion. (Refer to Fig. 7-14.) |
| 8 | RH-S-PIN | VR716 (C) | |
| 9 | Repeat steps 7 and 8 or steps 1 thru 8. | | |

### ● Red Horizontal Interval Compensation Adjustment

| Step No. | Adjustment Item | Adjustment Point | Adjustment Procedure |
|---|---|---|---|
| 1 | RH-POSITION | Remote control keys, 4 and 6 | Adjust so that the red vertical lines converge with the green vertical lines in the center of the screen to obtain yellow lines. (This serves as the reference setting, but if the lines diverge during the adjustment, proceed with the adjustment after considering this divergence.) |
| 2 | RH-LIN | VR717 (C) | Adjust so that the red vertical lines converge with the green vertical lines in the right and left sections of the screen to obtain yellow lines. (Refer to Fig. 7-14) |
| 3 | RH-4-LIN | VR720 (C) | |
| 4 | RH-S-LIN | VR718 (C) | |
| 5 | RH-SIZE | VR719 (C) | |
| 6 | Repeat steps 1 thru 5. | | |

### ● Red Vertical Distortion Compensation Adjustment

| Step No. | Adjustment Item | Adjustment Point | Adjustment Procedure |
|---|---|---|---|
| 1 | RV-SKEW | VR721 (C) | Adjust the red horizontal lines in the center of the screen to straight lines without distortion and lean. (Refer to Fig. 7-15.) |
| 2 | RV-BOW | VR722 (C) | |
| 3 | Repeat steps 1 and 2. | | |
| 4 | RV-KEY | VR723 (C) | Adjust the red horizontal lines in the lower and upper sections of the screen to straight lines without lean. (Refer to Fig. 7-15.) |
| 5 | RV-S-KEY | VR724 (C) | |
| 6 | RV-S-PIN | VR726 (C) | |
| 7 | RV-PIN | VR725 (C) | |
| 8 | Repeat steps 4 thru 7 or steps 1 thru 7. | | |

### ● Red Vertical Interval Compensation Adjustment

| Step No. | Adjustment Item | Adjustment Point | Adjustment Procedure |
|---|---|---|---|
| 1 | RV-LIN | VR727 (C) | Adjust so that the red horizontal lines converge the green horizontal lines in the center of the screen to obtain yellow lines. (This serves as the reference setting, but if the lines diverge during the adjustment, proceed with the adjustment after considering this divergence.) (Refer to Fig. 7-15.) |
| 2 | RV-S-LIN | VR729 (C) | |
| 3 | RV-POSITION | Remote control keys, 2 and 8 | |
| 4 | RV-SIZE | VR728 (C) | Adjust so that the red horizontal lines converge the green horizontal lines in the lower and upper sections of the screen to obtain yellow lines. (Refer to Fig. 7-15.) |
| 5 | Repeat steps 1 thru 4. | | |

### (3) BLUE LINE ADJUSTMENT

- Short-circuit TP-R (TP-375) and TP-GND (TP-377) in the VIDEO-AUDIO assembly, then green lines and blue lines appear on the screen. Release the short-circuit after blue line adjustment.
- Adjust each VR so that the blue lines converge with the green lines to obtain cyan lines.
- After adjustment, perform fine-adjustment by observing the overall screen.

#### • Blue Horizontal Distortion Compensation Adjustment

| Step No. | Adjustment Item | Adjustment Point | Adjustment Procedure |
|---|---|---|---|
| 1 | BH-SKEW | VR730 (C) | Observe the blue vertical lines on the screen, and adjust in the same way as the red horizontal distortion compensation adjustment. |
| 2 | BH-BOW | VR731 (C) | |
| 3 | BH-KEY | VR732 (C) | |
| 4 | BH-S-KEY | VR733 (C) | |
| 5 | BH-PIN | VR734 (C) | |
| 6 | BH-S-PIN | VR735 (C) | |

#### • Blue Horizontal Interval Compensation Adjustment

| Step No. | Adjustment Item | Adjustment Point | Adjustment Procedure |
|---|---|---|---|
| 1 | BH-POSITION | Remote control keys, 4 and 6 | Adjust so that the blue lines converge with the green lines to obtain cyan lines in the same way as the red horizontal interval compensation adjustment. |
| 2 | BH-LIN | VR736 (C) | |
| 3 | BH-4-LIN | VR739 (C) | |
| 4 | BH-S-LIN | VR737 (C) | |
| 5 | BH-SIZE | VR738 (C) | |

#### • Blue Vertical Distortion Compensation Adjustment

| Step No. | Adjustment Item | Adjustment Point | Adjustment Procedure |
|---|---|---|---|
| 1 | BV-SKEW | VR740 (C) | Observe the blue horizontal lines on the screen, and adjust in the same way as the red vertical distortion compensation adjustment. |
| 2 | BV-BOW | VR741 (C) | |
| 3 | BV-KEY | VR742 (C) | |
| 4 | BV-S-KEY | VR743 (C) | |
| 5 | BV-S-PIN | VR745 (C) | |
| 6 | BV-PIN | VR744 (C) | |

#### • Blue Vertical Interval Compensation Adjustment

| Step No. | Adjustment Item | Adjustment Point | Adjustment Procedure |
|---|---|---|---|
| 1 | BV-LIN | VR746 (C) | Adjust so that, the blue lines converge with the green lines to obtain cyan lines in the same way as the red vertical interval compensation adjustment. |
| 2 | BV-S-LIN | VR748 (C) | |
| 3 | BV-POSITION | Remote control keys, 2 and 8 | |
| 4 | BV-SIZE | VR747 (C) | |

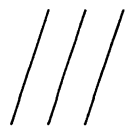
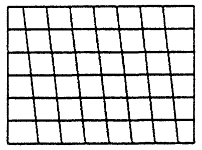
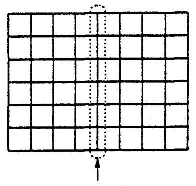
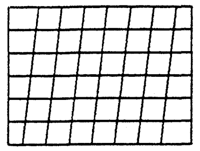
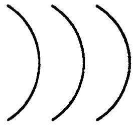
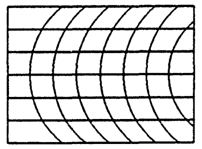
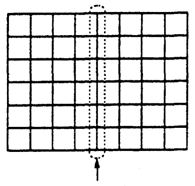
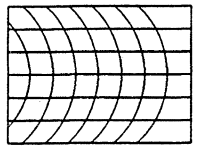
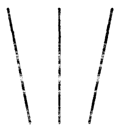
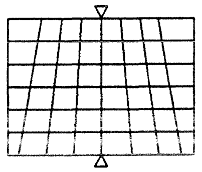
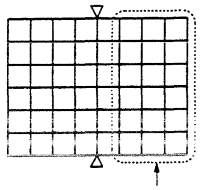
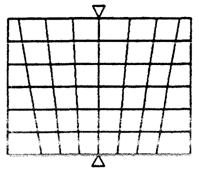
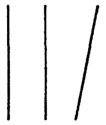
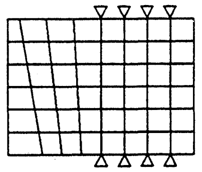
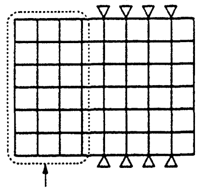
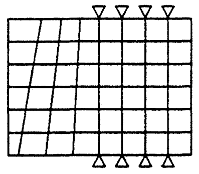
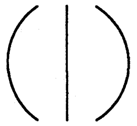
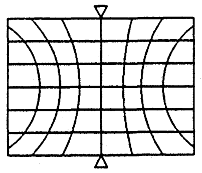
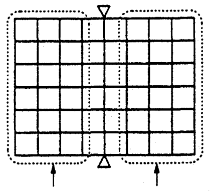
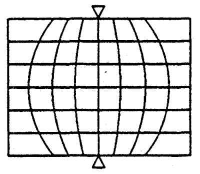
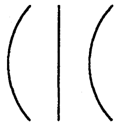
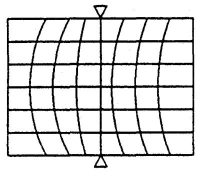
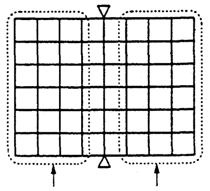
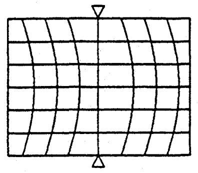
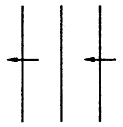
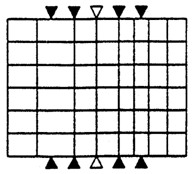
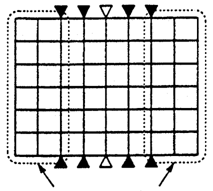
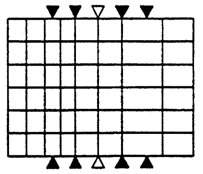
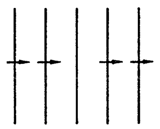
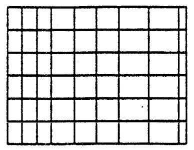
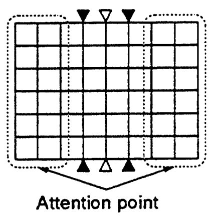
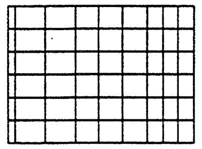
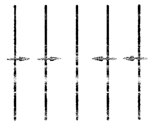
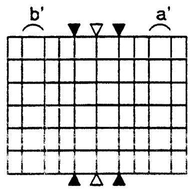
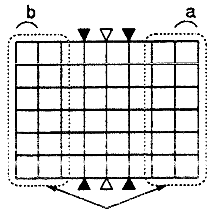
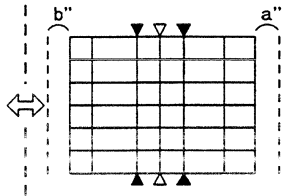
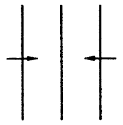
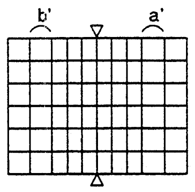
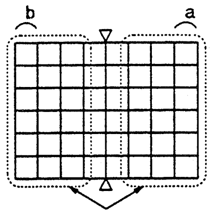
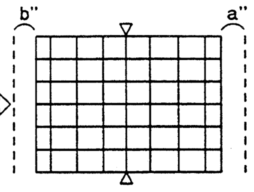
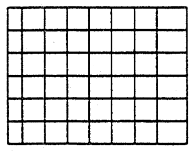
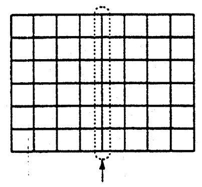
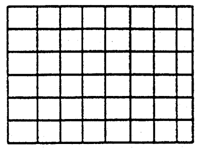
| Compensation | Signal and Mark *1 | Distorted Screen | Corrected Screen | Distorted Screen | Adjustment Point | |
|---|---|---|---|---|---|---|
| Horizontal distortion compensation | H-SKEW<br> |  | <br> |  | Observe the vertical lines in the center of the screen (where there is no H-KEY, H-S-KEY, H-PIN nor H-S-PIN movement), then adjust the vertical lines to eliminate lean. | To obtain the best possible lines, adjust the vertical lines in the center of the screen following the adjustment procedure of H-SKEW and H-BOW. |
| | H-BOW<br> |  | <br> |  | Observe the vertical lines in the center of the screen, then adjust the bowed lines to straight lines. | |
| | H-KEY<br> |  | <br> |  | Observe the vertical lines in the right section of the screen (where there is no H-S-KEY movement), then adjust the vertical lines to eliminate lean. | To eliminate lean, adjust the vertical lines in the right and left sections of the screen following the adjustment procedure of H-KEY and H-S-KEY. |
| | H-S-KEY<br> |  | <br> |  | Observe the vertical lines in the left section of the screen, then adjust the vertical lines to eliminate lean. | |
| | H-PIN<br> |  | <br> |  | Observe the vertical lines in the right and left sections of the screen, then adjust the bowed lines to symmetrize the right and left by H-S-PIN. And adjust the bowed vertical lines in the right and left sections of the screen to straight lines by H-PIN. | To eliminate distortion, straighten the vertical lines in the right and left sections of the screen following the adjustment procedure of H-PIN and H-S-PIN. |
| | H-S-PIN<br> |  | <br> |  | | |

Fig. 7-14 Horizontal compensatior

| Compensation | Signal and Mark *1 | Distorted Screen | Corrected Screen | Distorted Screen | Adjustment Point | |
|---|---|---|---|---|---|---|
| Horizontal interval compensation | H-LIN  |  |  |  | Adjust following the adjustment procedure of H- LIN, H- 4- LIN and H- S- LIN (remember the degree of H- SIZE movement)so that the interval between vertical lines on the right section is the same as on the left section, with a central point which does not move. For example, when the vertical lines in the right section of the screen are moved to right direction, move the vertical lines in the left section of the screen as same degree as the gap in the right section to the left direction. | The vertical lines in the center of the screen converge into the green lines by H- POSITION. And also, the vertical lines in the right and left sections of the screen converge into the green lines by H – LIN, H – 4- LIN, H-S-LIN and H-SIZE. |
| | H-4-LIN  |  |  |  | | |
| | H-S-LIN  |  |  |  | | |
| | H-SIZE  |  |  |  | Converge the vertical lines in the right and left sections of the screen to green lines. | |
| | H-POSITION |  |  |  | The vertical lines of the screen move parallel on the right and left by the convergence control of the remote control or main unit. When the vertical line moves at will, consider the degree of movement. | |

Note: KEY is short for KEYSTONE,
and LIN for LINEARITY
∇:denotes points which do not move
▼:denotes points which hardly move
*1:Sketch is printed on the p.c. board.

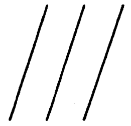
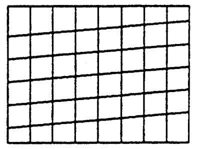
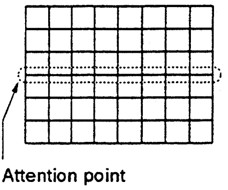
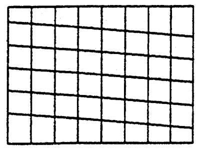
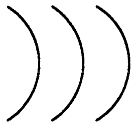
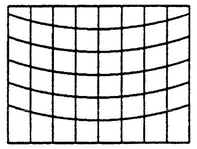
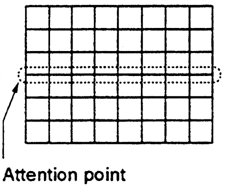
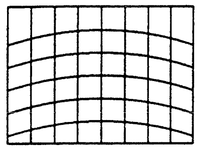
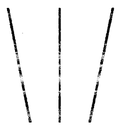
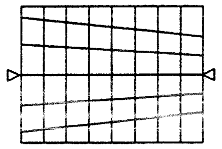
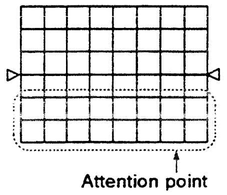
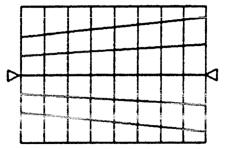
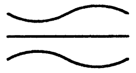
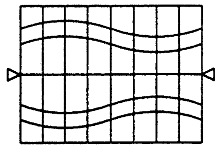
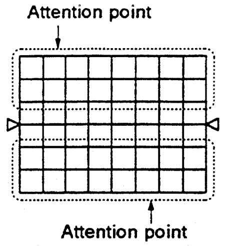
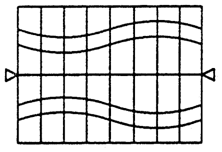
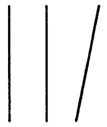
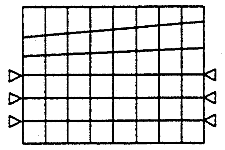
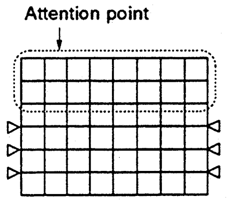
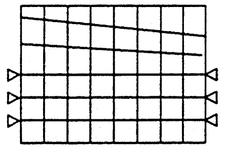
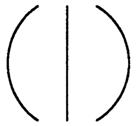
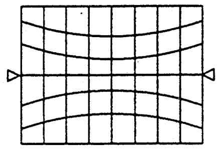
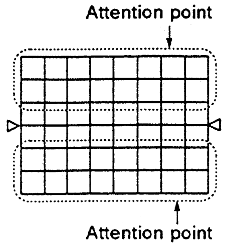
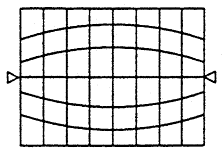
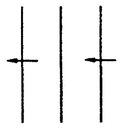
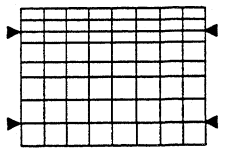
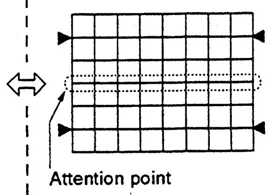
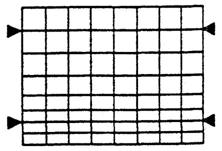
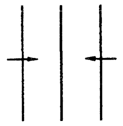
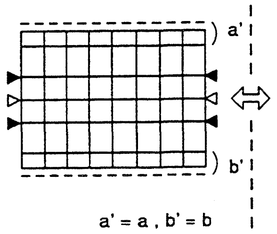
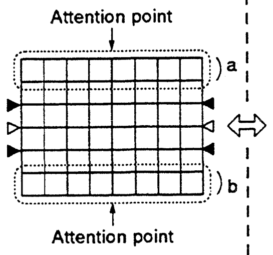
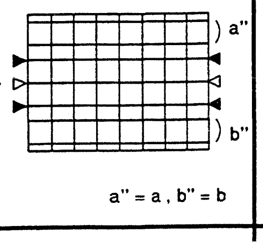
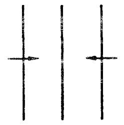
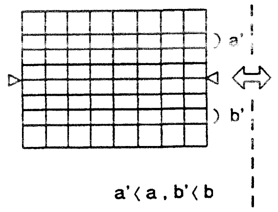
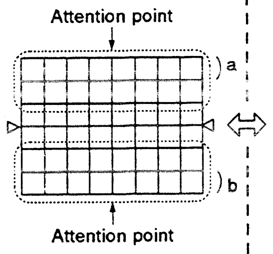
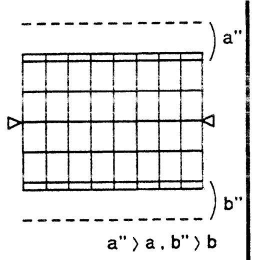
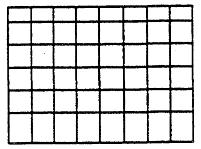
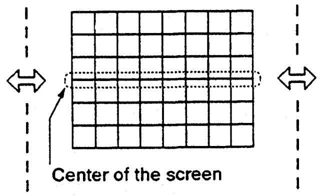
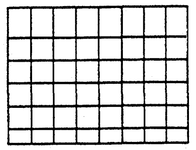
| Compensation | Signal and Mark *1 | Distorted Screen | Corrected Screen | Distorted Screen | Adjustment Point | |
|---|---|---|---|---|---|---|
| Vertical distortion compensation | V-SKEW<br> |  |  |  | Observe the horizontal lines in the center of the screen (where there is no V-KEY, V-SKEY nor V-PIN movement), then adjust the horizontal lines to eliminate lean. | To obtain the best possible lines, adjust the horizontal lines in the center of the screen following the adjustment procedure of V-SKEW and V-BOW. |
| | V-BOW<br> |  |  |  | Observe the horizontal lines in the center of the screen, then adjust the bowed lines to straight lines. | |
| | V-KEY<br> |  |  |  | Observe the horizontal lines in the lower section of the screen (where there is no V-S-KEY movement), then adjust the horizontal lines to eliminate lean. | To eliminate lean, adjust the horizontal lines in the upper and lower sections of the screen following the adjustment procedure of V-KEY, V-S-PIN and V-S-KEY. |
| | V-S-PIN<br> |  |  |  | Observe the horizontal lines in the upper and lower sections of the screen, then adjust the bowed lines to straight lines. | |
| | V-S-KEY<br> |  |  |  | Observe the horizontal lines in the upper section of the screen, then adjust the horizontal lines to eliminate lean. | |
| | V-PIN<br> |  |  |  | Observe the horizontal lines in the upper and lower sections of the screen, then adjust the bowed lines to straight lines. | To eliminate distortion, straighten the horizontal lines in the upper and lower sections of the screen following the adjustment procedure of V-PIN. |

Fig. 7-15 Vertical compensation

| Compensation | Signal and Mark | Distorted Screen | Corrected Screen | Distorted Screen | Adjustment Point | |
|---|---|---|---|---|---|---|
| Vertical interval compensation | V-LIN<br> |  |  Attention point |  | Converge the horizontal lines in the center of the screen into green lines.<br>At this time, be sure to the same horizontal line interval as upper section as lower section about a central point. However, if the same interval is not to obtained, adjust POSITION, adjust V-LIN and V-S-LIN again. | The horizontal lines in the center of the screen converge into the green line by V-LIN, V-S-LIN and V-POSITION. And also the horizontal lines in the upper and lower sections of the screen converge into the green line by V-SIZE. |
| | V-S-LIN<br> |  |  Attention point<br>a<br>b<br>Attention point |  | | |
| | V-SIZE<br> |  |  Attention point<br>a<br>b<br>Attention point |  | Converge the horizontal lines in the upper and lower sections of the screen into green lines. | |
| | V-POSITION |  |  Center of the screen |  | The horizontal lines of the screen move parallel on the upper and lower by the convergence control of the remote control or main unit. When the horizontal line moves at will, consider the degree of movement. | |

Note: KEY is short for KEYSTONE, and LIN for LINEARITY
▽:denotes points which do not move
▼:denotes points which hardly move

## 7.13 WHEN MICROCOMPUTER ASSEMBLY IS REPAIRED

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | When replacing IC307 (X24C08P) in the microcomputer assembly, the PIONEER standard, DPO base and the convergence position are set to the center of the variable ranges. Readjust them according to the specified adjustment procedures. The user settings are also to be made according to the user's preference. | | | |
| 2 | Telop position adjustment | Free video signal | VR301 (M) | Generate test cross signal, and adjust the cross to the center of the screen. |

## 7.14 WHEN MICROCOMPUTER ASSEMBLY IS REPLACED

- Adjust the telop position as described in section 7.13, and perform the user setting.

## 7.15 WHEN I/O-TEXT ASSEMBLY IS REPAIRED

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | 13.5MHz VCO output adjustment | No signal input | L605 (I) | Adjust the oscillation frequency at pin 17 of IC602 in the I/O-TEXT assembly to 13.5MHz ± 100kHz. |

## 7.16 WHEN I/O-TEXT ASSEMBLY IS REPLACED

- No adjustment required.

## 7.17 WHEN DPO ASSEMBLY IS REPAIRED

- Adjust the DPO sensitivity adjustment as described in section 7.26.

## 7.18 WHEN DPO ASSEMBLY IS REPLACED

- No adjustment required.

## 7.19 WHEN DYNAMIC FOCUS ASSEMBLY IS REPAIRED OR REPLACED

- Check the focus (the four corners of the screen). If the focus is not proper, adjust VR1 for the optimum setting.

## 7.20 WHEN HIGH VOLTAGE CONTROL ASSEMBLY IS REPAIRED OR REPLACED

- Check the H. SIZE, V. SIZE and convergence if required.

## 7.21 WHEN R, G OR B CRT DRIVE ASSEMBLY IS REPAIRED OR REPLACED

- White balance ought to provide the best picture. If not, adjust the white balance as follows.

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | White balance adjustment | Ordinary broadcasting | Screen (VR1)<br>(R)<br>(B) | Adjust the white if proper adjustment cannot be achieved as follows. Set the COLOR by the remote control to a minimum, adjust the screen VRs to obtain the best picture. |

## 7.22 WHEN CRT ASSEMBLY R, G, OR B IS REPLACED

- The CRT assembly R, G, B replacement procedure is described in Section“8. Replacing the CRT assembly”.
- When one or two tubes are replaced, match the new tubes with the remaining tube. If all three tubes are replaced, first adjust G, and then match the other two tubes with the G tube.

| Step No. | Adjustment Item | Input Signal | Adjustment Point | Adjustment Procedure |
|---|---|---|---|---|
| 1 | Deflection yoke angle and centering adjustment | Cross signal (or the test cross signal for convergence : Refer to Fig. 7-13.) | Centering magnet of deflection yoke of replaced CRT assembly (Refer to Fig. 7-19) | Adjust the deflection yoke angle until the color cross of the replaced CRT assembly is parallel with the color cross of a CRT assembly which has not been replaced. |
| | | | | Reset the convergence position (by operating CNT-to -MAX (MIN)-to-CNT in FACTORY ADJ mode) when the red or blue CRT assembly is replaced. |
| | | | | Adjust the centering magnet of the deflection yoke in the replaced CRT assembly until cross becomes converge. |
| 2 | Focus adjustment | Cross hatch | Replaced color focus VR (VR1) and lens assembly connected to replaced CRT assembly (Refer to Fig. 7-20 and Fig. 7-21.) | Adjust the focus of the replaced CRT assembly to the optimum condition. (Shifting the convergence position may provide easier observation. Be sure to return it to the original position after the adjustment is completed.) |
| 3 | Convergence adjustment | | Match the color convergence of the replaced CRT assembly with the color of an assembly which has not been replaced. See Section 7.12.2 CONVERGENCE ADJUSTMENT for details on the matching procedure. (When CRT assembly G is replaced, match the color convergence of the R, G and B.) | |
| 4 | White balance | Color bar signal without color signal | Screen VR(VR1)<br>VR651 (R) } Drive VR(V)<br>VR653 (B) } | Set the picture quality to standard by remote control. |
| | | | | Adjust the replaced color screen VR until grey can be seen in the color of dark area. |
| | | | | Adjust the replaced color drive VR until the color of bright area becomes white. (When CRT assembly G is replaced, slightly adjust the drive VR 〔R〕 and 〔B〕 .) |
| | | | | Adjust the PIONEER Standard Brightness only when the above adjustments have not been successfully effectuated due to the abnormal brightness. |
| 5 | PIONEER standard settings | Adjust as described in steps 8 thru 14 in Section 7.6.1. | | |

## 7.23 WHEN LENS ASSEMBLY IS REPLACED

- Remove the lenticular sheet, and attach tracing paper with a plastic tape, etc. instead. (Refer to Fig. 7 - 20.) Adjust the focus of the lens assembly newly mounted, by observing the picture shown on the tracing paper.

## 7.24 WHEN OTHER ASSEMBLIES ARE REPAIRED OR REPLACED

- No adjustment required.

## 7.25 DPO BASE SETTING

The DPO function features a DPO light-sensitive section in the front control panel designed to judge the level of external light when the front panel DPO switch(S859) is ON, thereby matching the PROJECTION MONITOR RECEIVER picture quality (contrast, color, bright) with the external light.

There are two STANDARD kinds of DPO picture qualities. When the environment is bright, the first DPO quality (DPO LIGHT) is selected. When the environment is dark, the second DPO quality(DPO DARK) is selected. The data on these two DPO qualities are stored in IC307(non-volatile memory).

Hence, if IC307(or peripheral circuits) is repaired or replaced, or if MICROCOMPUTER assembly is replaced, picture quality must be stored in IC307 again.

To store the DPO picture quality data, refer to the operating instructions. The values set at the factory are shown here for reference. These values are subject to change.

- DPO LIGHT
  - ⊛ (COLOR) : 0
  - ◑ (CONTRAST) : 0
  - ☼ (BRIGHT) : 0
- DPO DARK
  - ⊛ (COLOR) : −2
  - ◑ (CONTRAST) : −15
  - ☼ (BRIGHT) : +3

Note: For this adjustment, it is not necessary to activate FACTORY ADJ mode.

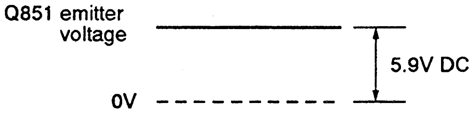
## 7.26 DPO SENSITIVITY ADJUSTMENT

The sensitivity of the DPO light-sensitive section is adjusted to determine the level of external light at which the DPO feature is activated. This adjustment is made by VR851 in the DPO assembly (refer to Fig. 7 - 21), and should be carried out according to the customer's preferences. The adjustment procedure used at the factory is given for reference.

(1) Using an incandescent light bulb as the light source, light is beamed directly into the DPO light sensitive section with a light - intensity level of 50 lux at the DPO.

(2) Switch the DPO switch(S859) on. "DPO ON" appears on the screen.

(3) DPO assembly VR851 is adjusted to obtain a voltage of 5.9V(± 0.1V) at the Q851 emitter.



## 7.27 ANODE VOLTAGE MEASURING METHOD

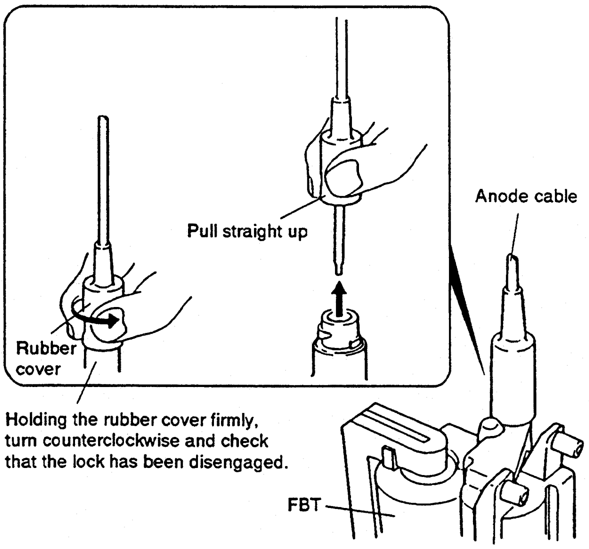
Disconnect the FBT anode cable as outlined in Fig. 7 - 16. Measure at the point where the cable enters the FBT.

Caution: Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, POWER SUPPLY - DEFLECTION assembly).

**SERVICEMAN WARNING**

Before removing the anode cable, turn off the power, unplug the AC plug and let the unit discharge for more than 1 minute.

Note:Determine the extent of the rubber cover before disconnecting the cable.



Holding the rubber cover firmly, turn counterclockwise and check that the lock has been disengaged.

Note :When reconnecting the cable, proceed in the reverse order. After reconnecting, tug on the cable to check that it is secure.

Fig. 7-16 Disconnecting the anode cable

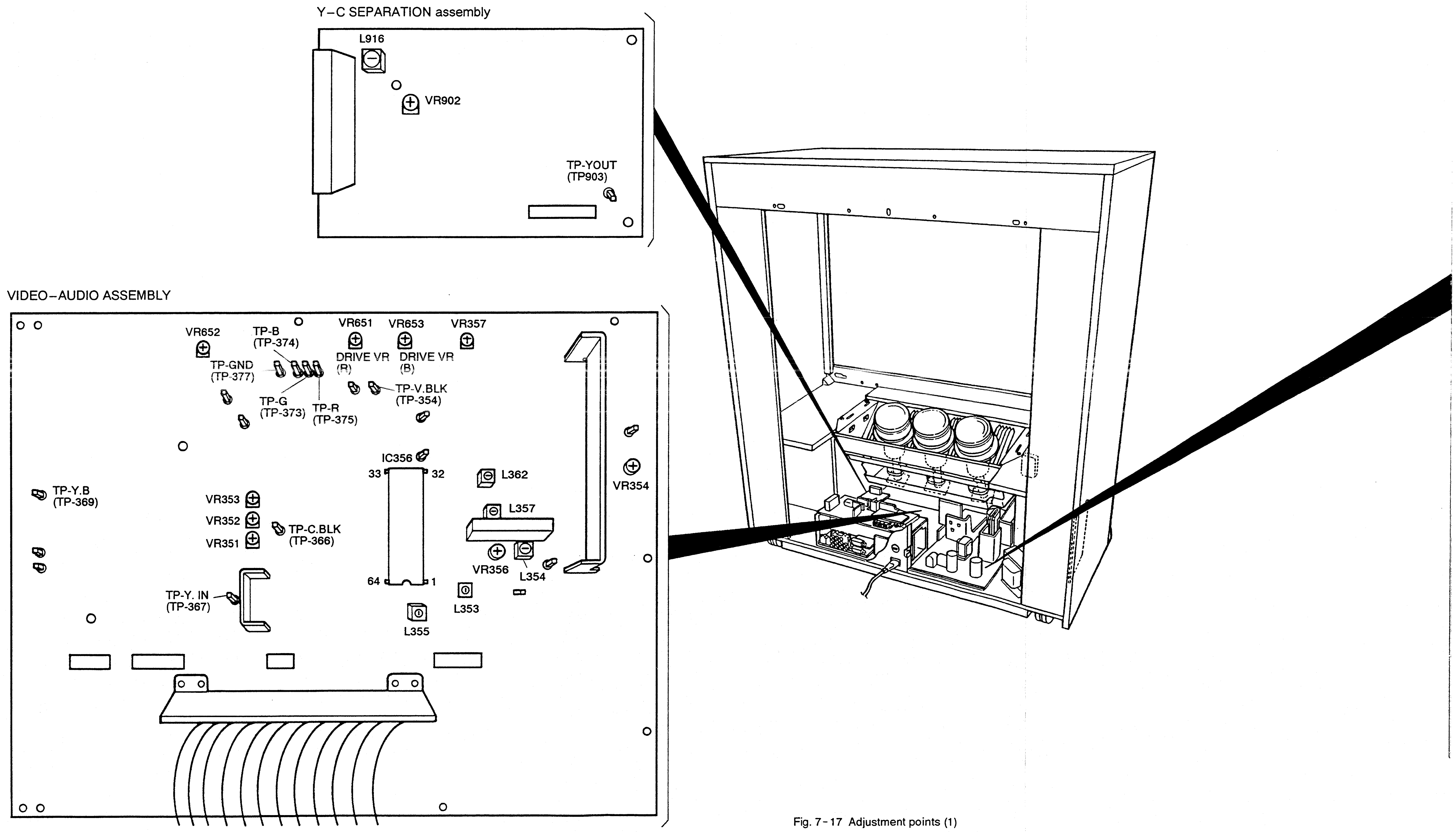

Y−C SEPARATION assembly
L916
VR902
TP-YOUT
(TP903)
VIDEO−AUDIO ASSEMBLY
VR652
TP-B
(TP-374)
VR651
VR653
VR357
TP-GND
(TP-377)
DRIVE VR
(R)
DRIVE VR
(B)
TP-V.BLK
(TP-354)
TP-G
(TP-373)
TP-R
(TP-375)
IC356
33
32
L362
VR354
TP-Y.B
(TP-369)
VR353
VR352
VR351
TP-C.BLK
(TP-366)
L357
VR356
L354
64
1
TP-Y. IN
(TP-367)
L353
L355

Fig. 7-17 Adjustment points (1)

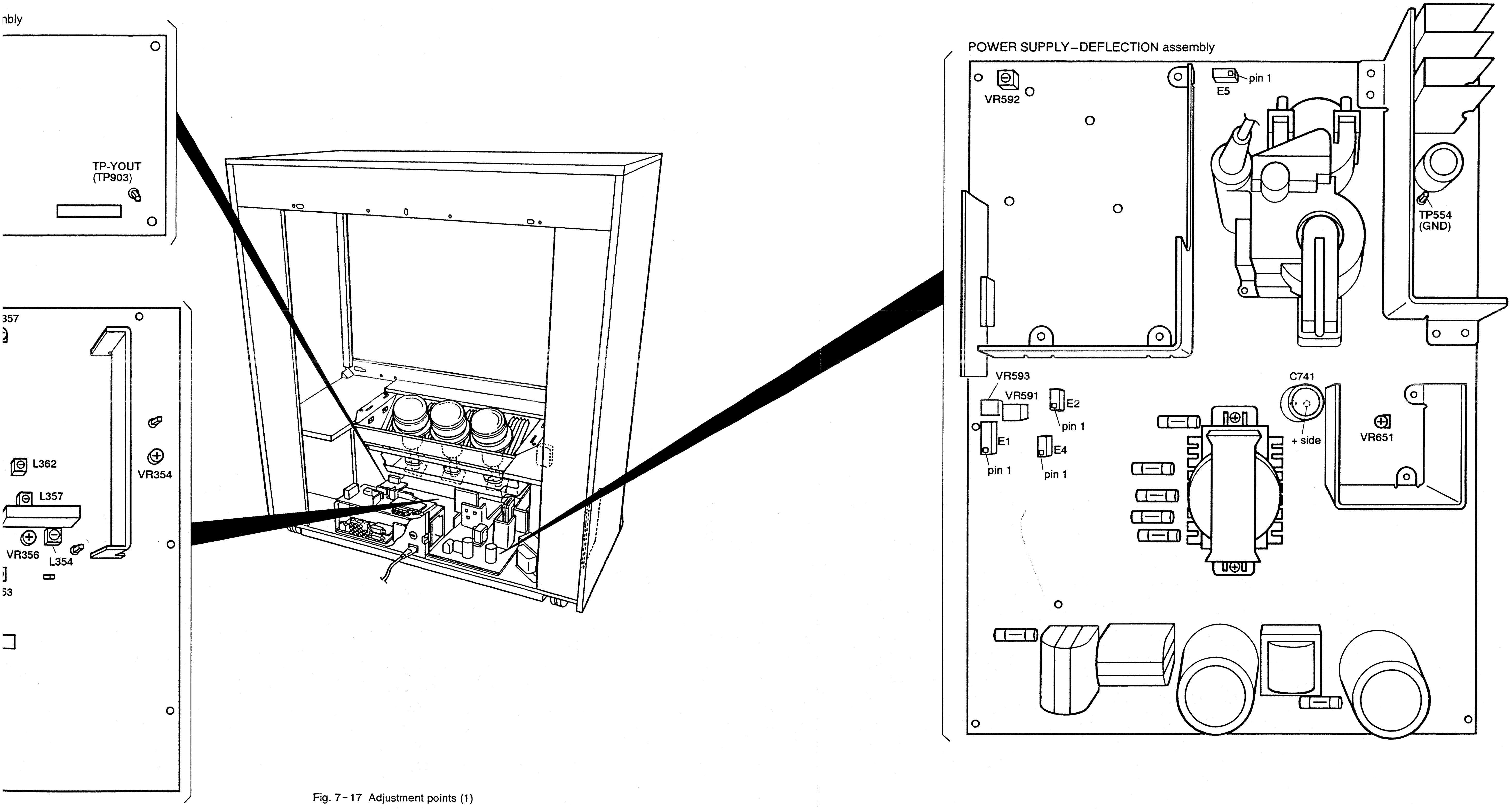

nbly
TP-YOUT
(TP903)
357
L362
L357
VR354
VR356
L354
53
POWER SUPPLY–DEFLECTION assembly
VR592
E5
pin 1
TP554
(GND)
VR593
VR591
E2
pin 1
E1
pin 1
E4
pin 1
C741
+ side
VR651

Fig. 7-17 Adjustment points (1)

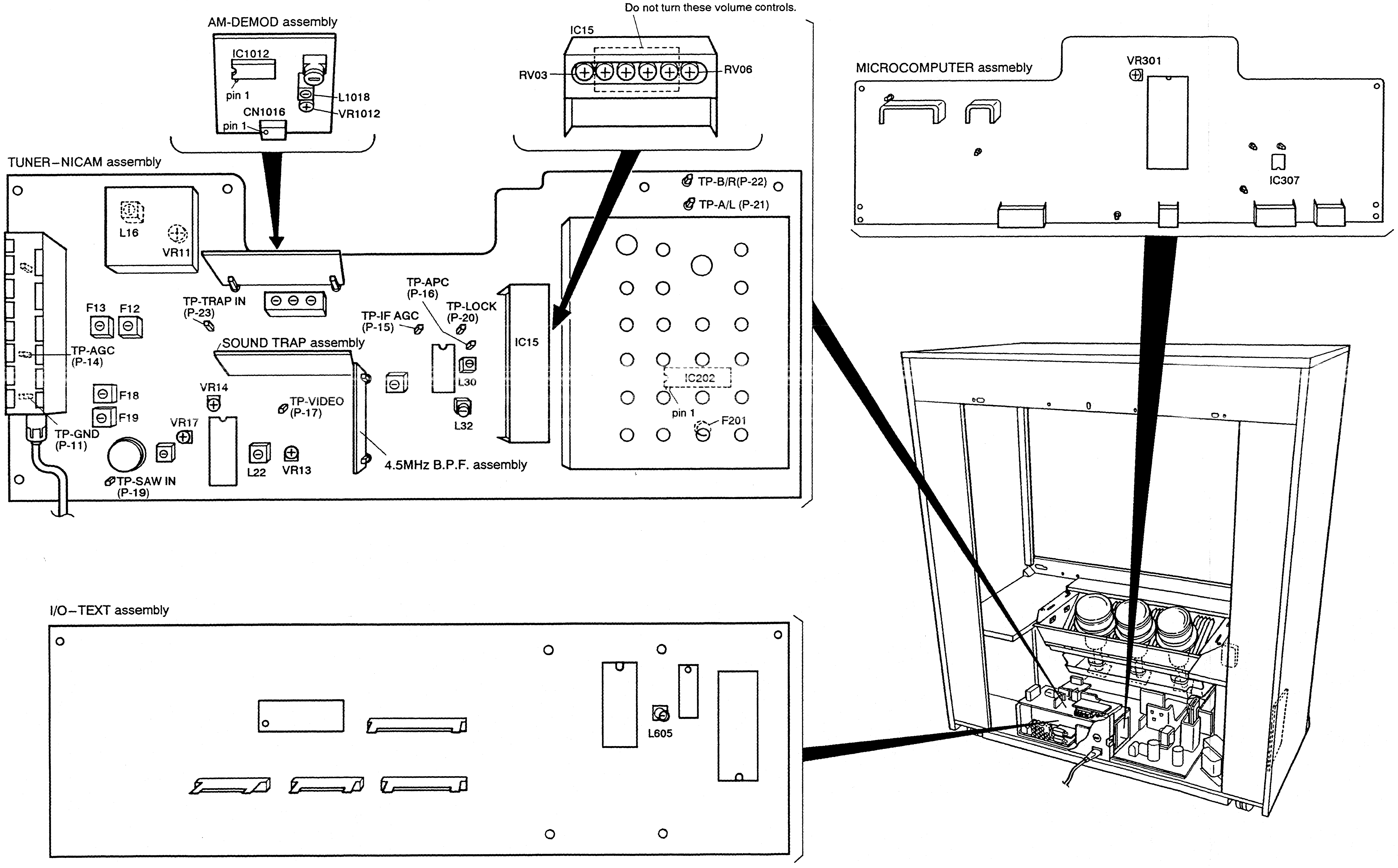
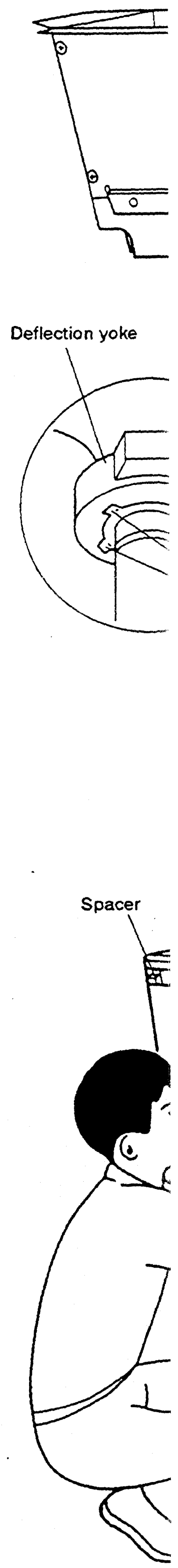

AM-DEMOD assembly
IC1012
pin 1
L1018
VR1012
CN1016
pin 1
Do not turn these volume controls.
IC15
RV03
RV06
MICROCOMPUTER assmebly
VR301
IC307
TUNER-NICAM assembly
L16
VR11
TP-B/R(P-22)
TP-A/L (P-21)
F13
F12
TP-TRAP IN
(P-23)
TP-APC
(P-16)
TP-LOCK
(P-20)
TP-IF AGC
(P-15)
SOUND TRAP assembly
IC15
TP-AGC
(P-14)
L30
IC202
F18
VR14
TP-VIDEO
(P-17)
F19
VR17
pin 1
F201
L32
TP-GND
(P-11)
TP-SAW IN
(P-19)
L22
VR13
4.5MHz B.P.F. assembly
I/O-TEXT assembly
L605

Fig. 7-18 Adjustmemt point (2)


Deflection yoke
Spacer

turn these volume controls.

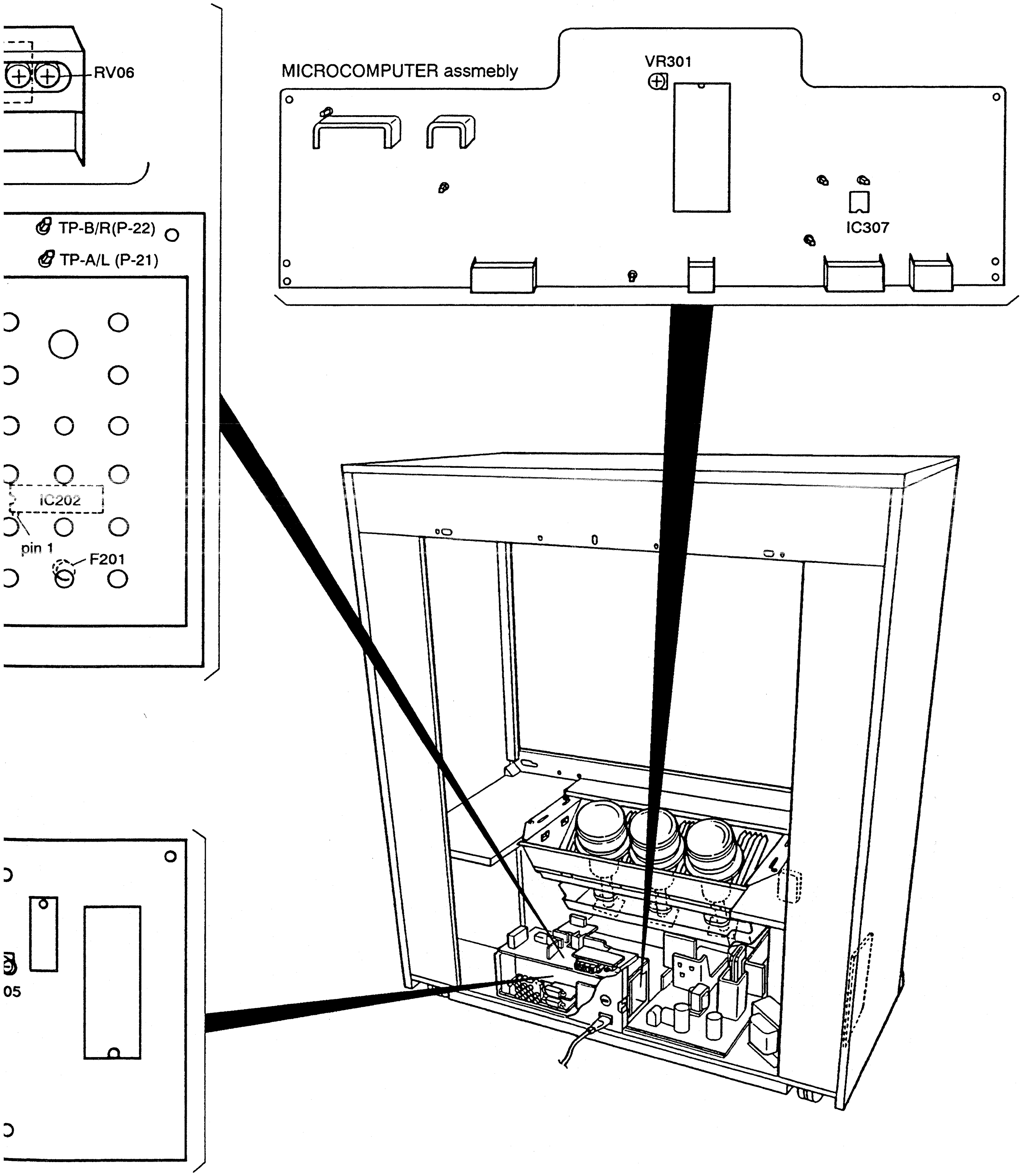
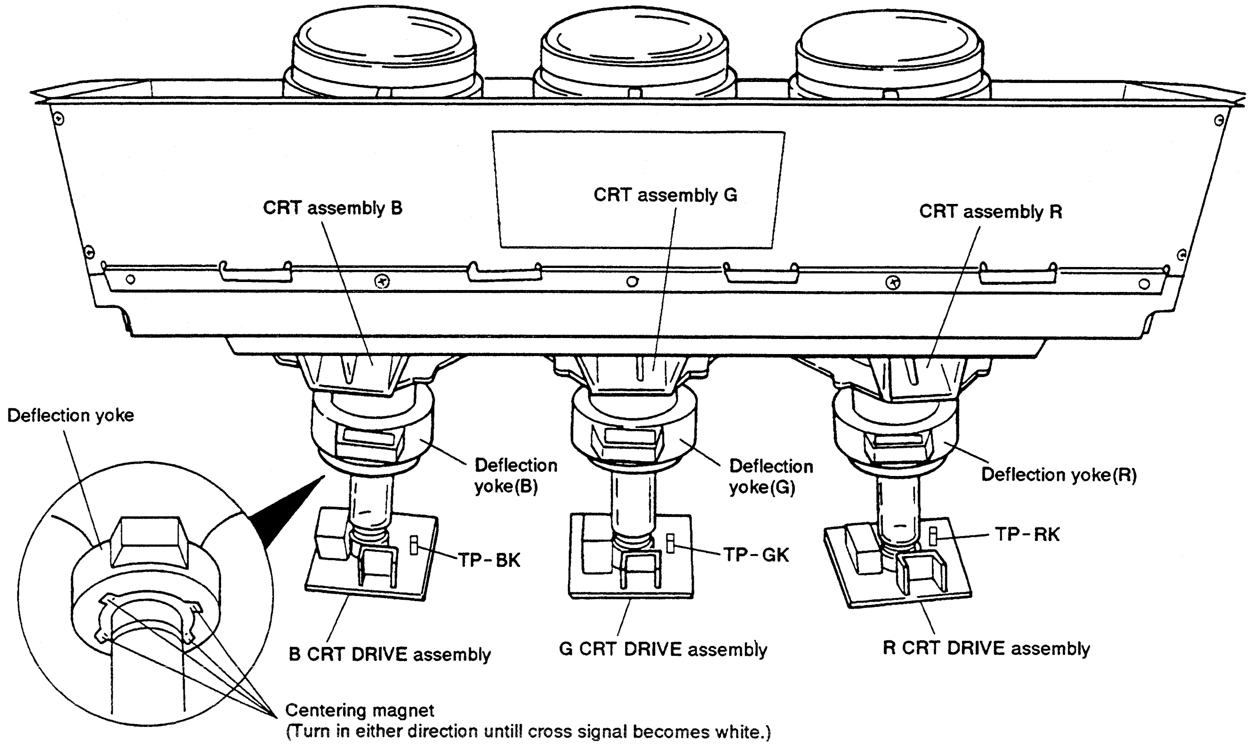

RV06
MICROCOMPUTER assmebly
VR301
IC307
TP-B/R(P-22)
TP-A/L (P-21)
IC202
pin 1
F201
05

Fig. 7-18 Adjustmemt point (2)


CRT assembly B
CRT assembly G
CRT assembly R
Deflection yoke
Deflection yoke(B)
Deflection yoke(G)
Deflection yoke(R)
TP-BK
TP-GK
TP-RK
B CRT DRIVE assembly
G CRT DRIVE assembly
R CRT DRIVE assembly
Centering magnet

(Turn in either direction untill cross signal becomes white.)

Fig. 7-19 Adjustment point (3)

Note : Attach a sheet of translucent paper, such as tracing paper, while inserting spacers 7 mm thick to align it with the regular position of the screen surface. Use spacers which provide the same thickness at both the right and left sides.

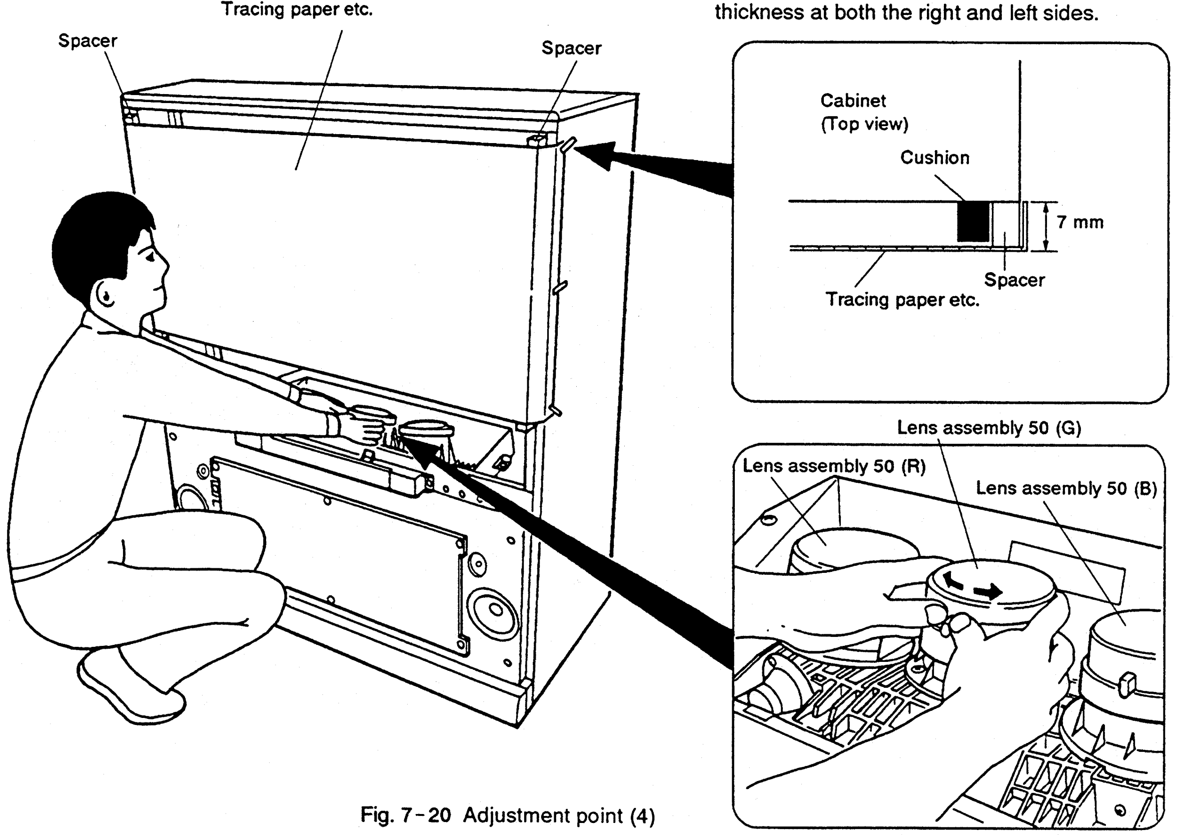

Tracing paper etc.
Spacer
Spacer
Cabinet
(Top view)
Cushion
7 mm
Spacer
Tracing paper etc.
Lens assembly 50 (G)
Lens assembly 50 (R)
Lens assembly 50 (B)

Fig. 7-20 Adjustment point (4)

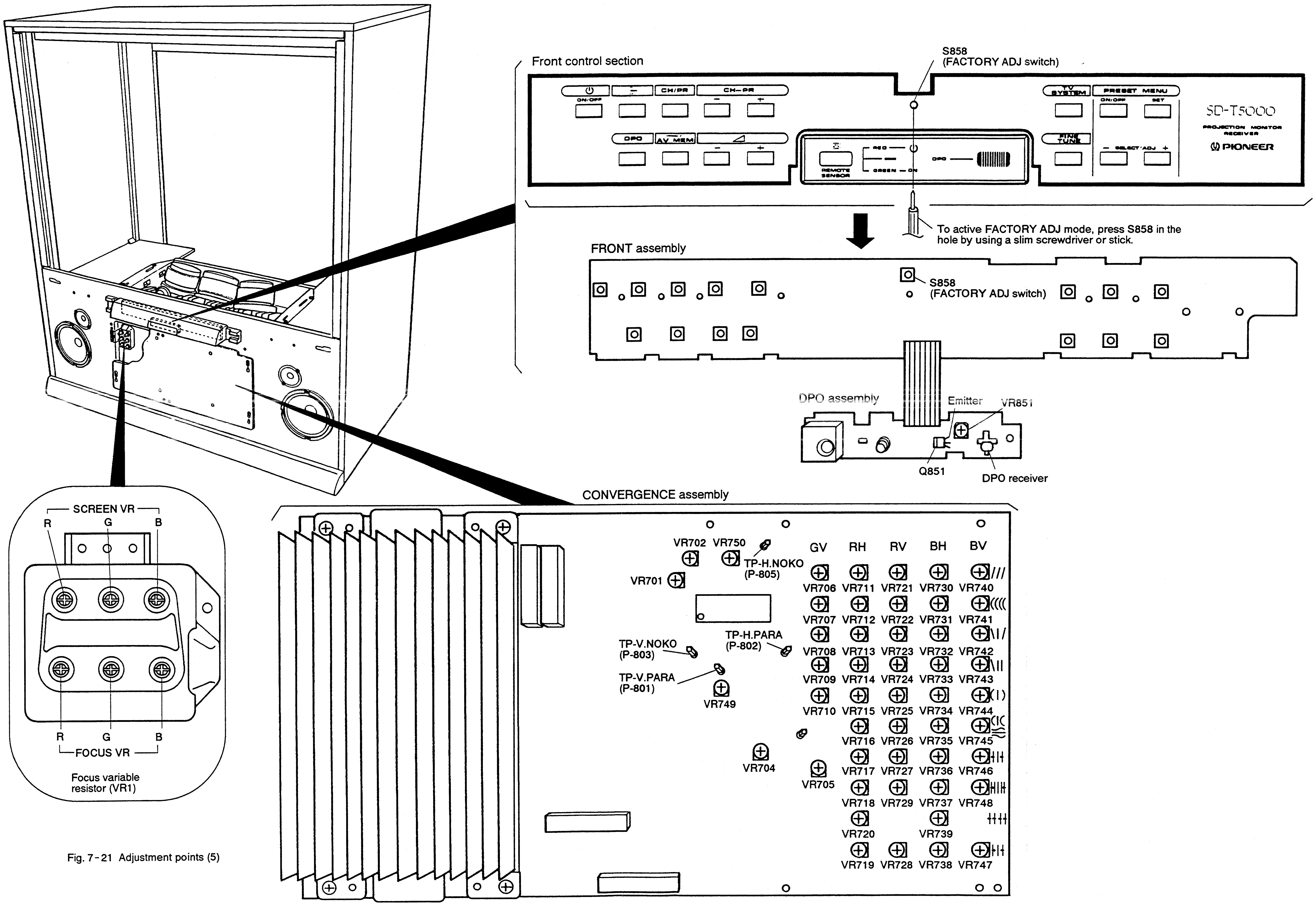

Front control section
S858
(FACTORY ADJ switch)
ON/OFF
CH/PR
CH−PR
−
+
DPO
AV MEM
REMOTE SENSOR
RED
GREEN
ON
TV SYSTEM
FINE TUNE
PRESET MENU
ON/OFF
SET
− SELECT·ADJ +
SD-T5000
PROJECTION MONITOR RECEIVER
PIONEER
To active FACTORY ADJ mode, press S858 in the hole by using a slim screwdriver or stick.
FRONT assembly
S858
(FACTORY ADJ switch)
DPO assembly
Emitter
VR851
Q851
DPO receiver
CONVERGENCE assembly
VR702
VR750
TP-H.NOKO
(P-805)
VR701
GV
RH
RV
BH
BV
VR706
VR711
VR721
VR730
VR740
VR707
VR712
VR722
VR731
VR741
TP-H.PARA
(P-802)
TP-V.NOKO
(P-803)
VR708
VR713
VR723
VR732
VR742
TP-V.PARA
(P-801)
VR709
VR714
VR724
VR733
VR743
VR749
VR710
VR715
VR725
VR734
VR744
VR716
VR726
VR735
VR745
VR704
VR705
VR717
VR727
VR736
VR746
VR718
VR729
VR737
VR748
VR720
VR739
VR719
VR728
VR738
VR747
SCREEN VR
R
G
B
R
G
B
FOCUS VR
Focus variable resistor (VR1)

Fig. 7-21 Adjustment points (5)

# 7. REGLAGES

- Le SD-T5000 est conforme aux systèmes conventionnels de télévision M, B/G, I, D/K, L et L', ainsi que les systèmes couleur NTSC, NTSC4.43, PAL et SECAM.
  Les différences dans les ajustements entre les systèmes sont clairement expliquées dans le texte qui suit. Quand l'appareil est utilisé dans un système après avoir été ajusté pour un autre, l'image et le son vont changer.
  Dans ce cas, réajuster l'appareil en fonction du système en vigueur.
- Il est vivement recommandé d'ajuster l'appareil en orientant l'écran vers l'est ou l'ouest.
- Les articles des ajustements sont décrits comme suit.

7.1 MODE FACTORY ADJ
7.2 QUAND L'ASSEMBLAGE POWER SUPPLY-DEFLECTION EST REPARE
7.3 QUAND L'ASSEMBLAGE POWER SUPPLY-DEFLECTION EST REMPLACE
7.4 QUAND L'ASSEMBLAGE Y-C SEPARATION EST REPARE
7.5 QUAND L'ASSEMBLAGE Y-C SEPARATION EST REMPLACE
7.6 QUAND L'ASSEMBLAGE VIDEO-AUDIO EST REPARE
7.7 QUAND L'ASSEMBLAGE VIDEO-AUDIO EST REMPLACE
7.8 QUAND L'ASSEMBLAGE TUNER-NICAM EST REPARE
7.9 QUAND L'ASSEMBLAGE TUNER-NICAM EST REMPLACE
7.10 QUAND L'ASSEMBLAGE AM-DEMOD EST REPARE
7.11 QUAND L'ASSEMBLAGE AM-DEMOD EST REMPLACE
7.12 QUAND L'ASSEMBLAGE DE CONVERGENCE EST REPARE OU REMPLACE
7.13 QUAND L'ASSEMBLAGE DU MICROCOMPUTER EST REPARE
7.14 QUAND L'ASSEMBLAGE DU MICROCOMPUTER EST REMPLACE
7.15 QUAND L'ASSEMBLAGE I/O-TEXT EST REPARE
7.16 QUAND L'ASSEMBLAGE I/O-TEXT EST REMPLACE
7.17 QUAND L'ASSEMBLAGE DPO EST REPARE
7.18 QUAND L'ASSEMBLAGE DPO EST REMPLACE
7.19 QUAND L'ASSEMBLAGE DYNAMIC FOCUS EST REPARE OU REMPLACE
7.20 QUAND L'ASSEMBLAGE HIGH VOLTAGE CONTROL EST REPARE OU REMPLACE
7.21 QUAND L'ASSEMBLAGE R, G OU B CRT DRIVE EST REPARE OU REMPLACE
7.22 QUAND L'ASSEMBLAGE CRT R, G OU B EST REPARE OU REMPLACE
7.23 QUAND L'ASSEMBLAGE DE L'OBJECTIF EST REMPLACE
7.24 QUAND D'AUTRES ASSEMBLAGES SONT REPARES OU REMPLACES
7.25 REGLAGE DE BASE DPO
7.26 AJUSTEMENT DE LA SENSIBILITE DPO
7.27 METHODE DE MESURE DE LA TENSION ANODIQUE

- Ces procédures d'ajustement sont décrites séparément pour les réglages qui suivent l'échange d'assemblage et les réglages qui suivent les réparations.
- Lors du remplacement des assemblages, toujours utiliser les remplacements recommandés.
- Les symboles entre parenthèses qui jouxent la position de réglage (  ) indiquent l'assemblage devant être ajusté.

| | |
|---|---|
| D | : Assemblage POWER SUPPLY-DEFLECTION |
| VR1 | : Résistance à mise au point variable |
| V | : Assemblage VIDEO-AUDIO |
| A | : Assemblage AM-DEMOD |
| C | : Assemblage CONVERGENCE |
| M | : Assemblage MICROCOMPUTER |
| T | : Assemblage TUNER-NICAM |
| IC | : IC15 de l'assemblage TUNER-NICAM |
| Y | : Assemblage Y-C SEPARATION |
| I | : Assemblage I/O-TEXT |

- Les points d'ajustement et les bornes TP de chaque assemblage sont illustrés aux Fig. 7-17 à 7-21.

Fig. 7-17:
Assemblage VIDEO-AUDIO, assemblage Y-C SEPARATION et assemblage POWER SUPPLY-DEFLECTION.

Fig. 7-18:
Assemblage MICROCOMPUTER, assemblage I/O-TEXT, assemblage TUNER-NICAM et assemblage AM-DEMOD.

Fig. 7-19:
Assemblages R, G OU B CRT DRIVE et bloc de balayage.

Fig. 7-20:
Assemblage d'objectif (rouge, vert, bleu).

Fig. 7-21:
Assemblage CONVERGENCE, panneau avant, assemblage FRONT et résistance à mise au point variable.

- Régler les bornes d'entrée du panneau arrière comme suit, sauf si indiqué autrement.
  Signal VIDEO: Borne AV4 VIDEO
  Signal AUDIO: Borne AV4 AUDIO
- Régler la qualité de l'image sur la norme par la télécommande, sauf si indiqué autrement.

## 7.1 MODE FACTORY ADJ

**● Du mode FACTORY ADJ**

Le mode FACTORY ADJ est activé/désactivé en enclenchant l'interrupteur S858 par le trou central de la section de réglage avant avec un bâtonnet ou un objet similaire (voir Fig. 7-21).

Le mode FACTORY ADJ se compose du mode ADJUSTMENT RANGE (plage de réglage) et du mode ADJUSTMENT OFFSET (décalage de réglage).

Le mode ADJUSTMENT RANGE est utilisé pour vérifier rapidement la variation des différents réglages d'image et de son (couleur, teinte, contraste, luminosité, netteté, graves, aigus, balance et convergence), tandis que le mode ADJUSTMENT OFFSET est utilisé pour régler la qualité de l'image (norme PIONEER) quand l'utilisateur a défini le réglage standard par la télécommande.

Quand le mode FACTORY ADJ est activé et qu'une opération CNT à MIN à CNT ou CNT à MAX à CNT est exécutée en mode ADJUSTMENT RANGE, toutes les valeurs de mémoire AV réglées par l'utilisateur sont effacées (reviennent à "0") et la position de convergence est réinitialisée au centre de la plage de variation.

Après avoir désactivé le mode FACTORY ADJ, recommencer le réglage des valeurs de mémoire AV et de la position de convergence, comme requis.

**● Comment utiliser le mode FACTORY ADJ**

① Mode ADJUSTMENT RANGE

Quand l'interrupteur S858 de la section de réglage avant (voir Fig. 7-21) est enclenché pour activer le mode FACTORY ADJ, l'écran affiche le mode ADJUSTMENT RANGE comme illustré à la Fig. 7-1①.

Dans ce mode, les points du centre (CNT), du minimum (MIN) et du maximum (MAX) des plages de réglage variable de la qualité de l'image, de la qualité du son et de la position de convergence peuvent être facilement vérifiés (sans devoir changer les réglages courants avec les touches + ⊿ ).

Pour procéder à la vérification, utiliser les touches numériques de la télécommande qui correspondent aux fonctions de réglage de l'imge et du son comme expliqué ci-dessous.

$\boxed{1}$ :COLOR
$\boxed{2}$ :TINT
$\boxed{3}$ :CONTR
$\boxed{4}$ :BRITE
$\boxed{5}$ :SHARP
$\boxed{7}$ :BASS
$\boxed{8}$ :TREBL
$\boxed{9}$ :BALNC
$\boxed{0}$ :CONVR (Convergence)

Par exemple, lors de la vérification de l'article TINT (teinte), appuyer sur la touche $\boxed{2}$ de la télécommande.

A chaque poussée sur cette touche $\boxed{2}$, les points CNT, MIN et MAX sont affichés cycliquement et dans cet ordre.

Actionner les autres touches de la même manière pour les autres articles (lors de la vérification des réglages de l'image et du son, utiliser un signal dont les variations sont aisément reconnaissables).

Remarques::

- $\boxed{9}$ :Lors de la vérification de BALNC (balance);
  CNT : Pour sortir les deux canaux.
  MIN : Pour sortir le canal droit uniquement.
  MAX : Pour sortir le canal gauche uniquement.
- $\boxed{0}$ :Lors de la vérification de CONVR (convergence);
  CNT : Pour la position centrale.
  MIN : Pour un déplacement en haut, à droite.
  MAX : Pour un déplacement en bas, à gauche.

② Mode ADJUSTMENT OFFSET (mode de réglage standard PIONEER)

Par enclenchement de la touche MUTE de la télécommande, le mode passe de ADJUSTMENT RANGE à ADJUSTMENT OFFSET, comme illustr à la Fig. 7-1②.

Le réglage de l'image (COLOR, TINT, CONTR, BRITE et SHARP) ajusté dans ce mode devient celui choisi comme réglage standard (norme PIONEER) avec la télécommande.

Pour procéder au réglage, choisir l'article ajuster avec la touche spécifiée ou les touches numériques ($\boxed{1}$ à $\boxed{5}$ ), puis ajuster l'article sélectionné avec les touches + ⊿ , en fonction de la procédure d'ajustement spécifiée. La valeur de réglage de référence est affichée dans le coin inférieur droit de l'écran.

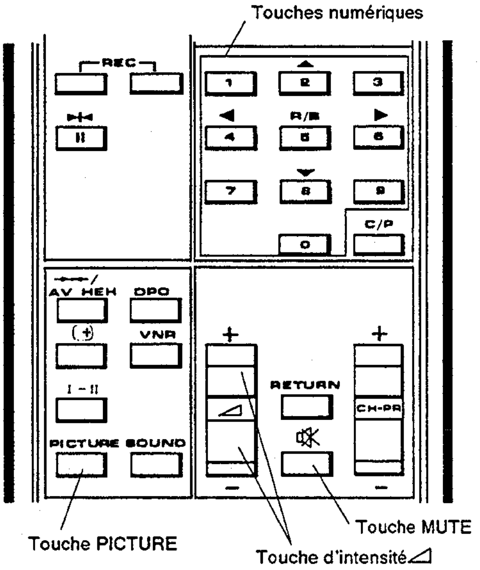
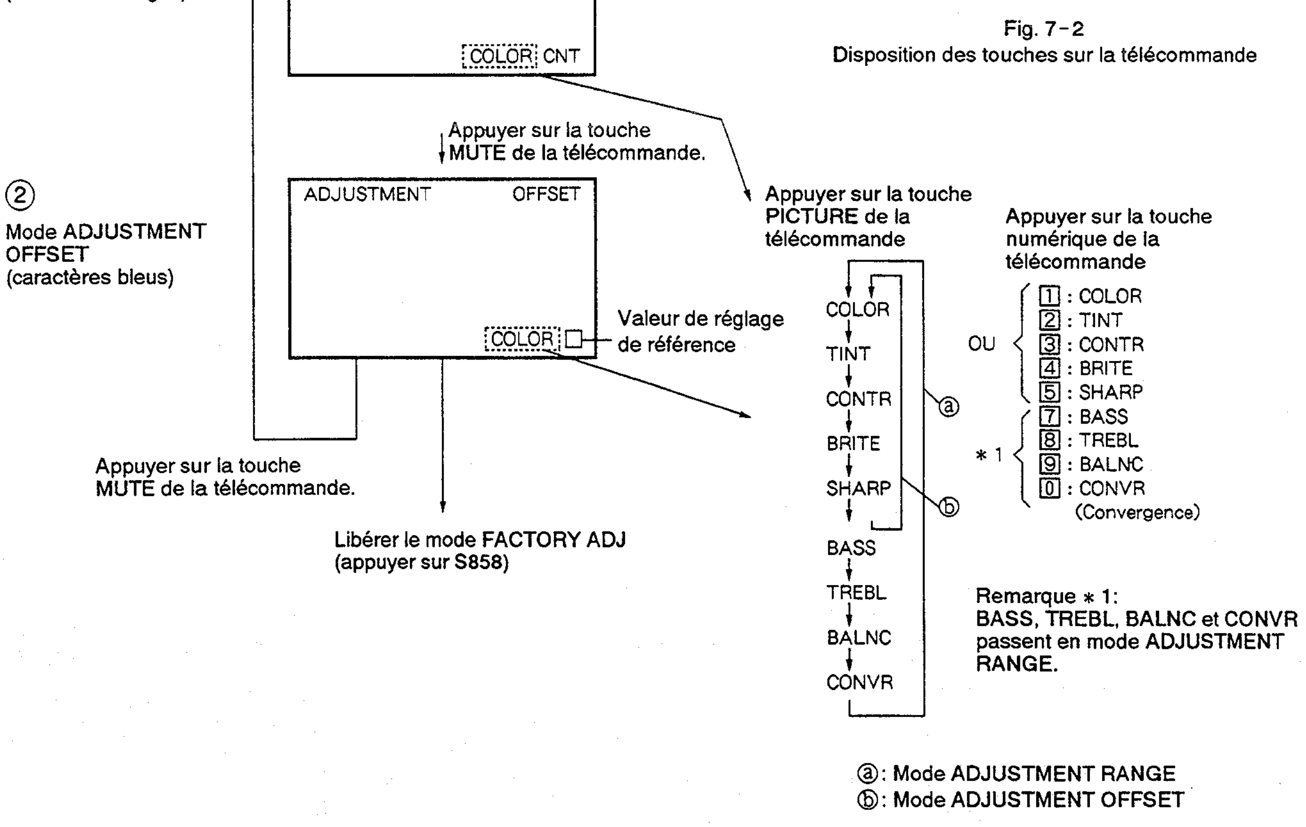

Touches numériques
REC
1
2
3
4
R/■
5
6
7
8
9
0
C/P
AV HEH
DPO
VNR
I - II
RETURN
CH-PR
PICTURE
SOUND
+
–
Touche PICTURE
Touche MUTE
Touche d'intensité◿

Fig. 7-2
Disposition des touches sur la télécommande


Entrer en mode FACTORY ADJ.
(enclencher S858.)
①
Mode ADJUSTMENT RANGE
(caractères rouges)
ADJUSTMENT
RANGE
COLOR CNT
Appuyer sur la touche MUTE de la télécommande.
②
Mode ADJUSTMENT OFFSET
(caractères bleus)
ADJUSTMENT
OFFSET
COLOR □
Valeur de réglage de référence
Appuyer sur la touche MUTE de la télécommande.
Libérer le mode FACTORY ADJ
(appuyer sur S858)
Appuyer sur la touche PICTURE de la télécommande
COLOR
TINT
CONTR
BRITE
SHARP
BASS
TREBL
BALNC
CONVR
ⓐ
ⓑ
Appuyer sur la touche numérique de la télécommande
OU
1 : COLOR
2 : TINT
3 : CONTR
4 : BRITE
5 : SHARP
∗1
7 : BASS
8 : TREBL
9 : BALNC
0 : CONVR
(Convergence)

Remarque ∗ 1:
BASS, TREBL, BALNC et CONVR passent en mode ADJUSTMENT RANGE.

ⓐ: Mode ADJUSTMENT RANGE
ⓑ: Mode ADJUSTMENT OFFSET

Fig.7-1 Affichage du mode FACTORY ADJ

## 7.2 QUAND L'ASSEMBLAGE POWER SUPPLY-DEFLECTION EST REPARE

Remarque: VR591 et VR593 sont protégées par un blindage (ANH1166) et ne peuvent être ajustées. Ne jamais tenter de tourner ces potentiométres en enlevant leur blindage sinon, la sensibilité du circuit de protection contre les rayons X et la tension anodique risque d' être affecté.

- Les points de test de réglage(TP) sont situés dans l'assemblage POWER SUPPLY-DEFLECTION.

### 7.2.1 Section Alimentation

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Alimentation 135V | Signal monoscope | VR651(D) | Ajuster la tension des deux côtés de C741 (assemblage POWER SUPPLY-DEFLECTION) sur 135V ± 1V. |

- **Vérification des tensions de sortie**

Aprés avoir effetué l'ajustement sur +135V, vérifier les tensions comme suit.

| Point de mesure | Tension | Point de mesure | Tension |
|---|---|---|---|
| E1 +13.5V (broche 9 ou 10) pour GND (broche 11) | +13,5V ± 0,5V | E2 +35V (broche 3 ou 4)<br>pour GND (broche 1 ou 2) | +32V ± 5V<br>(moins de +40V) |
| E1 +8V (broche 7 ou 8) pour GND (broche 11) | $+8V^{+2V}_{-1V}$ | | |
| E1 +30V (broche 13) pour GND (broche 11) | +30V ± 5V | E4 +25V (broche 5) pour V.GND (broche 4 ou 3) | +25V ± 3V |
| E1 +39V (broche 14) pour GND (broche 11) | +39V ± 3V | E4 − 24V (broche 1) pour V.GND (broche 4 ou 3) | − 24V ± 3V |
| E5 H.T.+ (broche 4) pour H.T. − (broche 5) | +6,25V ± 0,25V | E5 +220V (broche 1) pour TP554 (GND) | +220V ± 20V |

### 7.2.2 Section déflexion

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Réglage de la mise au point | Signal de hachure en croix | VR de mise au point (VR1) | Optimiser la mise au point de chaque assemblage CRT. (Il est plus facile de juger la mise au point si le rouge et le bleu sont déplacés en tournant les réglages de convergence de la télécommande comme illustré à la Fig. 7-13. Remettre ces réglages sur leur position d'origine après avoir terminé le réglage de la mise au point.) |
| 2 | Réglage de la taille horizontale | Signal monoscope ou émission ordinire | VR592(D) | Ajuster les cadres droit et gauche aux valeures suivantes. Lors du réglage avec une émission ordinaire, prendre garde à ne pas provoquer de noircissement.<br>•NTSC et NTSC 4.43: Droite = 92.5 ± 2%, Gauche = 92 ± 2%<br>•PAL et SECAM: Droite = 94.5 ± 2%, Gauche =93.5 ± 2%<br>Aprés cet ajustement, vérifier les réglages de convergence, V. SIZE et H. BLK . |
| 3 | Réglage de la balance du blanc | Emission ordinaire | Ecran (VR1)<br>(R)<br>(B) | Ajuster le blanc s'il le réglage adéquat ne peut etre obtenu comme suit. Régler COLOR (couleur) par la télécommande sur le minimum, ajuster les VR (résistances variables) de l'écran pour obtenir la meilleure image possible. |

## 7.3 QUAND L'ASSEMBLAGE POWER SUPPLY-DEFLECTION EST REMPLACE

Remarque: VR591 et VR593 de l'assemblage POWER SUPPLY-DEFLECTION sont fournies en tant que pièces de rechange et sont protégées par un blindage (ANH1166). Ne jamais tenter d'enlever ce blindage (ANH1166).

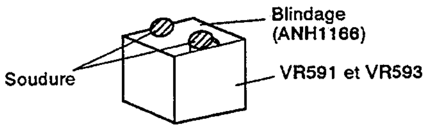


Fig. 7-3 Blindage

### 7.3.1 Section alimentation

- Aucun ajustement n'est requis.

### 7.3.2 Section déflexion

- Ajuster la mise au point, la taille horizontale et la balance du blanc comme décrit à la section 7.2.2.

## 7.4 QUAND L'ASSEMBLAGE Y-C SEPARATION EST REPARE

- Ajustement du système NTSC uniquement.

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Réglage du filtre en peigne | Barre de couleur | VR902 (Y)<br>L916 (Y) | Ajuster de façon que les éléments du signal couleur à TP-OUT (TP-903) de l'assemblage Y-C SEPARATION soient réduits au maximum. |
| 2 | Vérifier la norme PIONEER | Si l'on n'obtient pas la meilleure image possible, ajuster comme décrit à la section 7.6. | | | |

## 7.5 QUAND L'ASSEMBLAGE Y-C SEPARATION EST REMPLACE

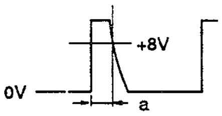
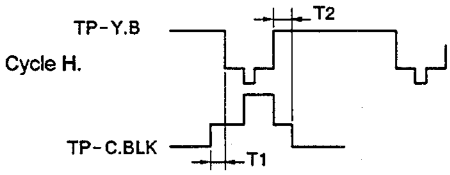
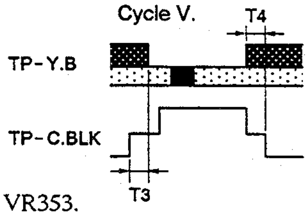
- Aucun ajustement n'est requis.

## 7.6 QUAND L'ASSEMBLAGE VIDEO-AUDIO EST REPARE

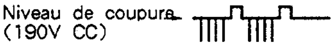
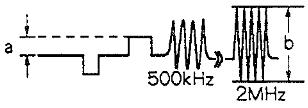
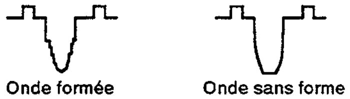
- Les points de test de réglage(TP) se situent sur l'assemblage VIDDEO-AUDIO, sauf si spécifié autrement..
- Avant de procéder au réglage, vérifier le réglage du filtre en peigne, décrit à la section 7.4. (pour le systéme NTSC uniquement)

### 7.6.1. Procédure de réglage

- Le étape 5 à 6 est décrit séparément dans un autre tableau. Voir à la section 7.6.2 à 7.6.3.

| N° d'étape | Article de riglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Réglage V. SIZE *1 | signal monoscope | VR357 (V) | Ajuster les cadres supérieur et inférieur aux valeurs suivantes. Lors du réglage avec une émission ordinaire, prendre garde à ne pas noircir l'image.<br>• NTSC et NTSC 4.43: Supérieur :91% ± 3%, Infériieur :95% ± 3%<br>• PAL et SECAM: Supérieur :92% ± 3%, Infériieur :94 ± 3%<br>Après cet ajustement, vérifier les réglages de covergence et H. SIZE. |
| 2 | Réglage de largeur V. BLK (suppression verticale) (1) *1 | signal 100% blanc | VR354 (V) | Ajuster le niveau TP-V. BLK(TP-354) la largeur de l'impulsion, sur "a", pour devenir la valeur spécifiée ci-dessous, au point +8V.<br>Forme d'onde de TP-354<br> <br>•NTSC et NTSC 4.43<br>a=1,2msec<br>•PAL<br>a=1,2msec ± 60 µ sec<br>•SECAM<br>a=1,2msec |
| 3 | Réglage de largeur H. BLK (suppression horizontale) | signal 100% blanc | VR352 (V) | Tout en observant simultanément TP-Y.B(TP-369) et TP-C.BLK(TP-366), ajuster T1 dans le cycle H sur la valeur spécifiée ci-dessous.<br>Aprés avoir réglé T1, vérifier que T2 présente la valeur spécifiée ci-dessous.<br>• Avec NTSC et NTSC 4.43<br>T1=1,2 µ sec ± 200nsec<br>T2=2,4 µ sec ± 400nsec<br>• Avec PAL et SECAM<br>T1=1,0 µ sec ± 400nsec<br>T2=1,8 µ sec ± 400nsec<br> |
| 4 | Réglage de largeur V. BLK (suppression verticale) (2) *1 | signal 100% blanc | VR351 (V)<br>VR353 (V) | Observer le cycle V. avec le réglage de l'étape 3, ajuster T3 sur la valeur spécifiée ci-dessouse. Le réglage de T3 terminé , vérifier que T4 présente la valeur spécifiée ci-dessous.<br>① Pour le système NTSC ou NTSC4.43<br>Ajuster T3 et T4 aux valeurs suivantes avec VR351.<br>T3 = 300 µ sec ± 50 µ sec<br>T4 = 390 µ sec ± 100 µ sec<br>Si un signal du système PAL ou SECAM est reçu après ce réglage, la valeur réglée ② (VR353) est déviée. Ajuster VR353 avec PAL ou SECAM SG obteinir la valeur ② indiquée ci-dessous.<br>② Pour le système NTSC ou NTSC4.43<br>Ajuster T3 et T4 aux valeurs suivantes avec VR353.<br>T3 = 350 µ sec ± 50 µ sec<br>T4 = 500 µ sec ± 100 µ sec<br> |

*1: Quand le réglage V.SIZE est effectué, veiller à vérifier les réglages V.BLK (1) et (2).

| N° d'étape | Article de réglage | | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|---|
| 5 | Réglage du système PAL | Ajuster la ligne de retard du verre du démodulateur PAL, comme décrit à la section 7.6.2(réglage pour le système PAL uniquement). | | | |
| 6 | Réglage du système SECAM | Ajuster la bobine SECAM IDENT, la bobine de détection et le filtre de sonnerie(BELL FILTER) comme décrit à la section 7.6.3.(réglage pour le système SECAM uniquement). | | | |
| 7 | Réglage de la balance du blanc | | Signal de barre couleur sans signal couleur | VR d'écran (R),(B) (VR1) | Ajuster les VR de l'écran (R) et (B) jusqu'à ce que le gris devienne visible dans la couleur de la zone sombre (ne pas modifier la résistance variable du vert à cette étape). |
| | | | | VR651(R)<br>VR653(B) VR d'entraînement(V) | Avec la VR d'entraînement, ajuster la couleur de la zone claire sur le blanc. |
| 8 | Réglage standard PIONEER | Régler sur le mode de réglage standard PIONEER du mode FACTORY ADJ. Quand le réglage est terminé, repasser à l'état normal). | | | |
| 9 | | Réglage de la luminosité | Signal de hachure en croix | COLOR (*2) | Minimiser la couleur par la télécommande. |
| | | | | BRITE (*2) | Ajuster le niveau de coupure à TP-RK de l'assemblage R. CRT DRIVE (entraînement du tube cathodique rouge) sur 190 V CC (aprés le réglage, vérifier la balance du blanc).<br><br> <br>(Après cet ajustement, ajuster la couleaur comme décrit à la étap 4.) |
| 10 | | Réglage de la netteté | Multi salve | SHARP (*2) | A TP-G (TP-373), régler le taux de b (valeur crête à crête à 2 MHz) sur a (niveau du noir au blanc) de ala manière suivante.<br>•Avec NTSC et NTSC 4.43<br>a : b = 2 : 2,7 (+2,6dB)<br>•Avec PAL<br>a : b = 2 : 2,6 (+2,3dB)<br>•Avec SECAM<br>a : b = 2 : 2,7 (+2,6dB)<br><br> |
| 11 | | Réglage de la couleur | Barre de couleur | COLOR (*2) | Ajuster l'écran sur la condition optimale. |
| 12 | | Réglage de la teinte (*3) | | TINT (*2) | Ajuster l'écran sur la condition optimale. |
| 13 | | Réglage du contraste | Signal libre | CONTR (*2) | Ajuster l'écran sur la condition optimale. |
| 14 | | | | — | A TP-BK de l'assemblage B. CRT DRIVE (entraînement du tube cathodique bleu), vérifier que le signal présente la forme suivante.<br><br> |
| 15 | Réglage de traînage du bleu | | Signal en croix | — | Ajuster la sortie SG du signal en croix d'entrée au niveau maximum. |
| | | | | | Maximiser le contraste avec la télécommande. |
| | | | | VR652 (V) | Tourner VR652 à fond dans le sens des aiguilles d'une montre (qui provoque un traînage du bleu). |
| | | | | | Tourner VR dans le sens des aiguilles d'une montre jusqu'à ce que le traînage du bleu disparaisse de la ligne verticale de la croix sur l'écran. |

*2: Ajuster avec la télécommande.
*3: Ajuster pour les système NTSC et NTSC 4.43.

### 7.6.2 Ajustement du système PAL

- Cet ajustement est indépendant du tableau de la section 7.6.1. car il n'est valable que pour le système PAL.
- L'ajustement requiert le motif DEM.
- Si le réglage est mal réalisé, les couleurs changent à chaque ligne de balayage et ce phénomène ne peut être decelé qu'avec le motif DEM.

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 5-1 | Réglage de ligne de retard du verre pour le démodulateur PAL | Motif PAL DEM | — | Régler l'oscilloscope comme suit: H=2mS/div; V=100 mV/div. Observer les formes d'onde à la broche 60(R-Y IN) et à la broche 62(B-Y IN) de IC356. |
| 5-2 | | | L354 (V) | Ajuster de sorte que la forme d'onde de la zone de mesure 1 de la Fig. 7-5 (Fig. 7-6 a) soit comme illustré à la Fig. 7-6 b. |
| 5-3 | | | VR356 (V) | Ajuster de sorte que la forme d'onde de la zone de mesure 2 de la Fig. 7-5 soit comme illustré à la Fig. 7-6 c. |
| 5-4 | Répéter les étapes 5-2 et 5-3 jusqu'à obtention d'une image optimale. Ajuster de façon que la zone de mesure 1 soit réglée en dessous de 50 mVc-c et la zone de mesure 2, en dessous de 180 mVc-c. | | | |

Remarque;
△;(B − Y)=0
□;(R − Y)=0

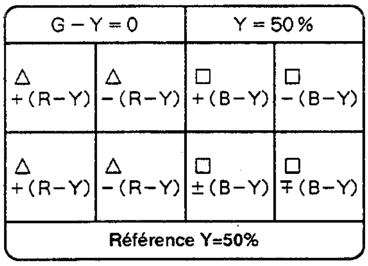

G − Y = 0
Y = 50 %
△ +(R−Y)
△ −(R−Y)
□ +(B−Y)
□ −(B−Y)
△ +(R−Y)
△ −(R−Y)
□ ±(B−Y)
□ ∓(B−Y)
Référence Y=50%

Fig. 7−4 Motif DEM

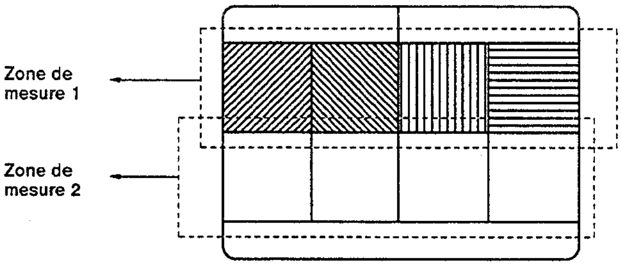
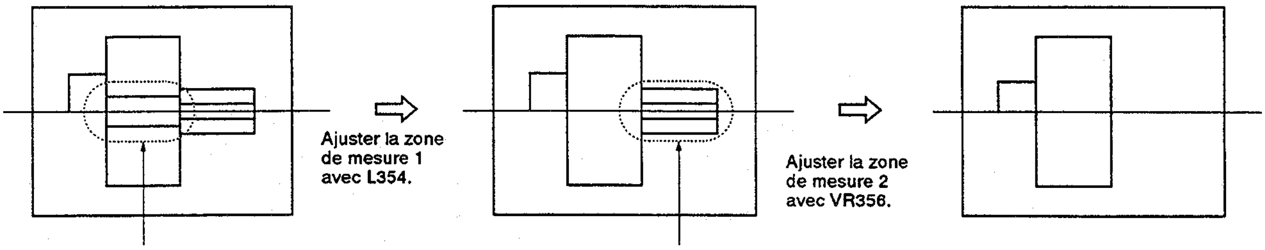

Zone de mesure 1
Zone de mesure 2

Fig. 7−5 Zone de misure


Ajuster la zone de mesure 1 avec L354.
Ajuster la zone de mesure 2 avec VR356.

Forme d'onde de la zone de mesure 1

a.

Forme d'onde de la zone de mesure 2

b.

Après le réglage

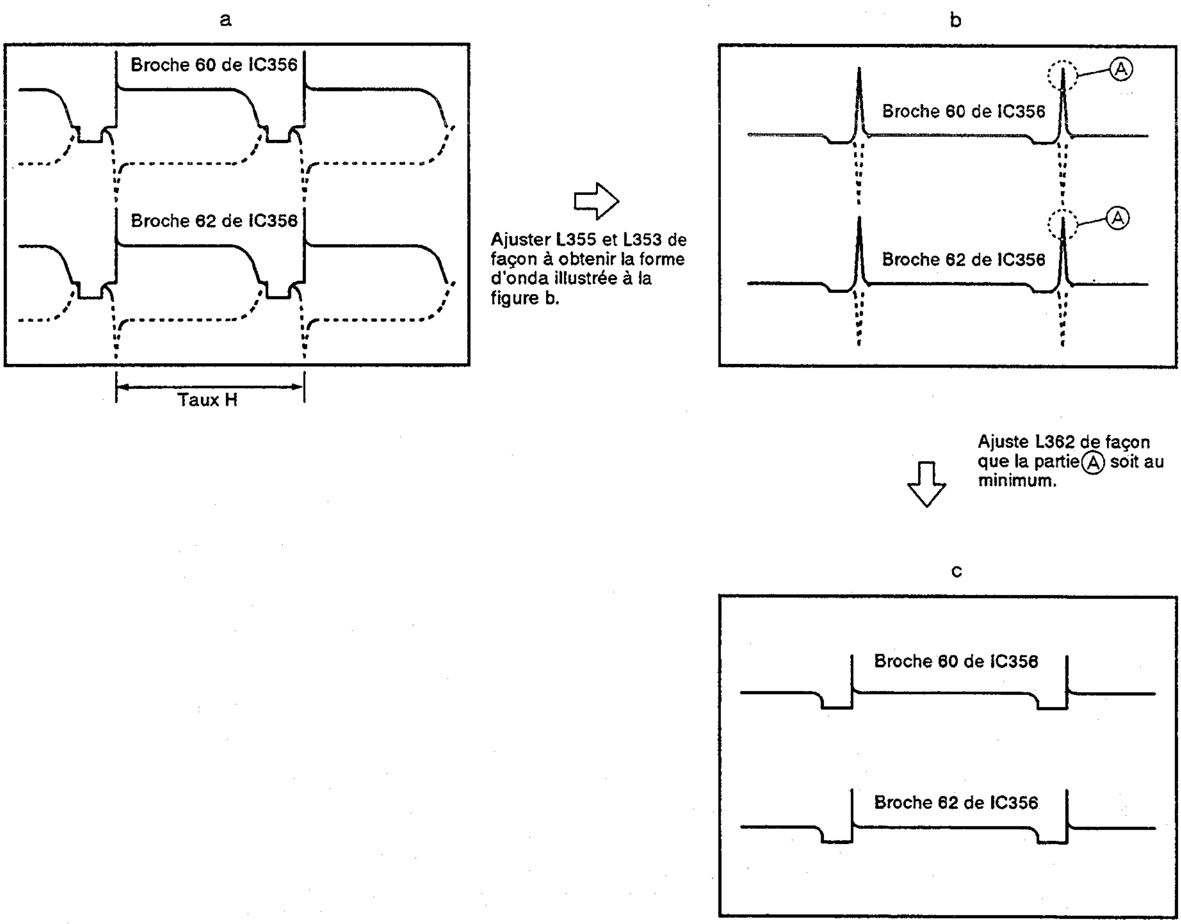
c.

Fig. 7−6 Ecran de l'oscilloscope

### 7.6.3 Ajustement du système SECAM

- Cet ajustement est indépendant car il ne s'applique qu'au système SECAM.

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 6-1 | Réglage d'identité SECAM | Barre de couleur SECAM | L357 (V) | Ajuster de façon que la tension CC à la broche 23 de IC356 soit maximale. |
| 6-2 | Réglage de la bobine de détection et du filtre de sonnerie | Signal du noir (porteuse couleur SECAM inclue) | L355 (V):<br>Broche 60(R-Y IN)<br>L353 (V):<br>Broche 62(B-Y IN) | Ajuster de façon que la forme d'onde apparaisse comme illustré à la Fig. 7-7 b, à la broche 60(R-Y IN) et à la broche 62(B-Y IN) de IC356. |
| 6-3 | | | L362 (V) | Ajuster de façon que la forme d'onde apparaisse comme illustré à la Fig. 7-7 c, à la broche 60 (R-Y IN) et à la broche 62 (B-Y IN ) de IC356. |
| 6-4 | Répéter les étapes 6-2 et 6-3 jusqu'à obtention d'une image optimale. Vérifier que les barres de couleur soient affichées correctement sur l' écran après le réglage. | | | |


a
Broche 60 de IC356
Broche 62 de IC356
Taux H
b
Broche 60 de IC356
Broche 62 de IC356
Ⓐ
Ⓐ
c
Broche 60 de IC356
Broche 62 de IC356

Ajuster L355 et L353 de façon à obtenir la forme d'onda illustrée à la figure b.

Ajuste L362 de façon que la partie Ⓐ soit au minimum.

Fig. 7-7 Réglage de la bobine de détection SECAM

## 7.7 QUAND L'ASSEMBLAGE VIDEO-AUDIO EST REMPLACE

- Avant le réglage, vérifier l'ajustement du filtre en peigne à la section 7.4 (système NTSC uniquement).
- Procéder au réglage V. SIZE, au réglage de largeur (1) V. BLK, au réglage de largeur H. BLK, au réglage de largeur (2) V. BLK, à la balance du blanc, au réglage standard PIONEER et au réglage de traînage du bleu comme décrit à la section 7.6.

## 7.8 QUAND L'ASSEMBLAGE TUNER-NICAM EST REPARE

- Les points de test de réglage(TP) se situent sur l'assemblage TUNER-NICAM sauf si spécifié autrement.

### 7.8.1 Réglage de la section tuner

- Les articles à ajuster ici dépendant du système de télévision local. Les système pour lesquels les réglages sont requis sont présentés dans le tableau ci-dessous.
- Pour le signal d'entrée indispensable, voir le Tableau 7-1. S'il n'est pas mentionné dans le tableau, envoyer les signaux à la borne d'entrée de l'antenne. Observer la Fig. 7-9 lors de la connexion.
- Lorsqu'un autre système de télévision est reçu après avoir effectué les ajustements pour un système de télévision spécifique, les conditions de réception vont se déteriorer. Dans ce cas, réajuster sur le système de télévision courant ou sur un des meilleurs systèmes spécifiés dans le Tableau 7-1.
- Le réglage de trappe de l'étape 3 est décrit séparément dans un autre tableau. Voir à la section 7.8.2.
- La procédure destinée à entrer en mode de test (mode AFT OFF) est fournie plus tard.

Tableau 7-1

•Les valeurs données pour "fp" dans le tableau sont des valeurs de référence. Les régler sur la fréquence et la chaîne les plus proches de celles disponobles dans la région d'utilisation.

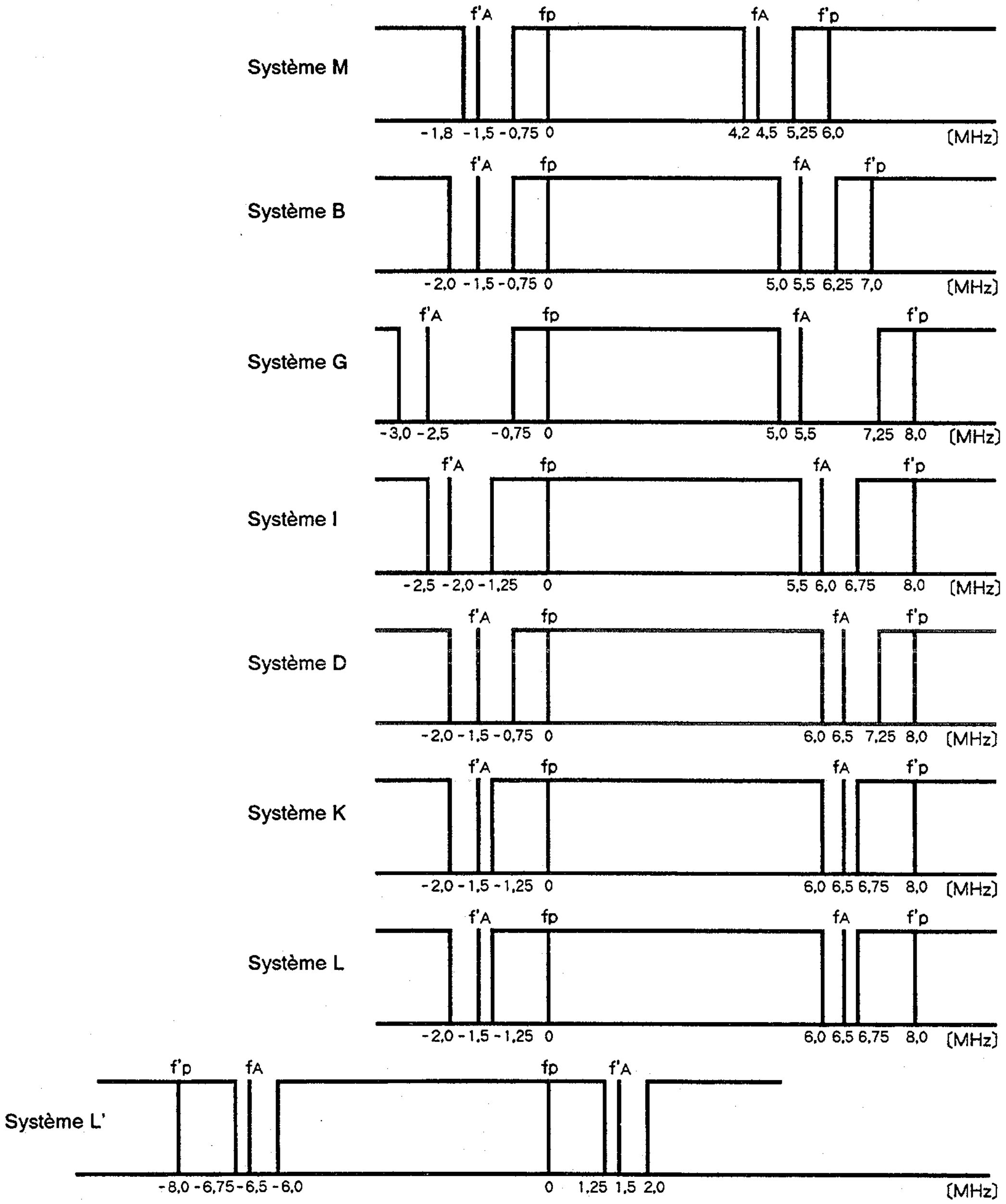
| N° du signal | Contenu du signal | Niveau d'entrée d'antenne *2 | Réglage du système SG *1 |
|---|---|---|---|
| ① | Signal non modulé de 33,4MHz | 90 dB$\mu$V | L' |
| ② | Signal non modulé de 39,9MHz | 90 dB$\mu$V | |
| ③ | fp=119,25MHz, barre de couleur<br>Audio ; 1kHz, 100% modulation. monaural | 80 dB$\mu$V | M, B, G, I, D, K, L ou L'au choix (B et G sont les meilleurs.) |
| ④ | fp=196,25MHz, multi salve<br>Audio ; 1kHz, 100% modulation. monaural | 58 dB$\mu$V | M, B, G, I, D ou K au choix (B et G sont les meilleurs.) |
| ⑤ | fp=175,25MHz, 100% blanc<br>Audio ; 1kHz, 100% modulation. stereo | 80 dB$\mu$V | |
| ⑥ | fp=487,25MHz, barre de couleur<br>Audio ; 400Hz, 100% modulation. monaural | 80dB$\mu$V | L |
| ⑦ | fp=55,25MHz, barre de couleur<br>Audio ; 1kHz, 100% modulation. ± 25kHz déviation, monaural | 80 dB$\mu$V | M (US) |
| ⑧ | fp=67,25MHz, hachure en croix<br>Audio ; 300Hz, 30% modulation. stéréo (canal gauche uniquement) | 80 dB$\mu$V | |
| ⑨ | fp=175,25MHz, 10 intervalles<br>Audio ; 5kHz, 30% modulation. stéréo (canal gauche uniquement) | 80 dB$\mu$V | |

*1: Réguler le système SG sur le système de télévision local.

*2:Régler le niveau audio SG sur une valeur inférieure à celle du niveau d'entrée de l'antenne, en utilisant les valeurs suivantes.
•Système M : 6dB , •Système B : 10dB , •Système G : 10dB , •Système I : 7dB , •Système D : 7dB ,
•Système K : 7dB , •Système L : 10dB , •Système L' : 10dB

| N° d'étape | Article de réglage | Système pour lequel le réglage est requis | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|---|
| 1 | Réglage OSC L' | L' | Signal ① entré à TP-IF IN (P-12) | L16 (T) | Ajuster la fréquence de TP-TRAP IN(P-23) sur 38,9MHz ± 20kHz(utiliser l'analyseur de spectre). |
| 2 | Circuit d'équilibrage du circuit d'inverseur |  | Signal ② entré à TP-IF IN (P-12) | VR11 (T) | Minimiser l'élément 39,9MHz de TP-TRAP IN(P-23) (utiliser l'analyseur de spectre). |
| 3 | Réglage de trappe | Ce réglage dépend du système de télévision loocal. Voir section 7.8.2. |  |  |  |
| 4 | Réglage LLD vidéo | M, B/G, I, D/K, L, L' | Signal ③ | L22 (T) | Vérifier que le signal de couleur est fourni à TP-VIDEO (P-17). Dans la négative, ajuster L22 pour fournir la barre de couleur. |
|  |  |  |  |  | Minimiser l'élément du signal couleur de TP-VIDEO (P-17). |
| 5 | Réglage AGC *1 | M, B/G, I, D/K, L, L' | Signal ④ | VR17 (T) | Ajuster la tension CC de TP-AGC(P-14) sur 6,5V ± 0,3V. |
| 6 | Réglage du niveau vidéo *1 |  | Signal ⑤ | VR13 (T) | Ajuster le niveau de sortie du signal vidéo à TP-VIDEO(P-17) sur 2,2Vc-c ± 0,1V. |
| 7 | Réglage du niveau SECAM | L, L' | Signal ⑥ | VR14 (T) | Ajuster le niveau de détection vidéo à TP-VIDEO(P-17) sur 2,2Vc-c ± 0,1V. |
| 8 | Réglage VCO | M, B/G, I, D/K | Signal ⑤ | L30 (T) | Vérifier que le signal vidéo (100 % blanc) est fourni à TP-LOCK (P-20).<br>Dans la négative, ajuster le signal vidéo. |
| 9 |  |  |  | —— | Mesurer la tension CC à TP-APC (P-16) quand TP-IF AGC (P-15) et TP-GND (P-11) sont court-circuitées. |
| 10 |  |  |  | L30 (T) | Libérer TP-IF AGC (P-15) et TP-GND (P-11), puis ajuster la tension CC de TP-APC (P-16) sur ± 100 mV, en fonction de la valeur obtenue à l'étape 9. |
| 11 | Réglage de distorsion audio US | Système M (US uniquement) | Signal ⑦ | L32 (T) | Ajuster pour minimiser la distorsion de la sortie de l'onde sinusoïdale de 1 kHz à TP-A/P (P-21: borne de sortie du canal gauche). |
| 12 | Réglage de séparation stéréo US |  | Signal ⑧ | RV03(IC) | Minimiser la sortie de TP-A/L (P-21: borne de sortie du canal gauche). |
|  |  |  | Signal ⑨ | RV06(IC) | Minimiser la sortie de TP-A/L (P-21: borne de sortie du canal gauche). |

*1: Lors de l'ajustement AGC et du niveau vidéo dans le système L ou L', utiliser SG de M, B, G, I, D, ou K (SG de B et G sont les meilleurs). Si ces articles ne sont pas ajustés correctement, une saturation du blanc, du bruit ou des battements risquent de se manifester sur l'image ou l'image risque de s'assombrir.


Système M
f'A fp fA f'p
-1,8 -1,5 -0,75 0 4,2 4,5 5,25 6,0 (MHz)
Système B
f'A fp fA f'p
-2,0 -1,5 -0,75 0 5,0 5,5 6,25 7,0 (MHz)
Système G
f'A fp fA f'p
-3,0 -2,5 -0,75 0 5,0 5,5 7,25 8,0 (MHz)
Système I
f'A fp fA f'p
-2,5 -2,0 -1,25 0 5,5 6,0 6,75 8,0 (MHz)
Système D
f'A fp fA f'p
-2,0 -1,5 -0,75 0 6,0 6,5 7,25 8,0 (MHz)
Système K
f'A fp fA f'p
-2,0 -1,5 -1,25 0 6,0 6,5 6,75 8,0 (MHz)
Système L
f'A fp fA f'p
-2,0 -1,5 -1,25 0 6,0 6,5 6,75 8,0 (MHz)
Système L'
f'p fA fp f'A
-8,0 -6,75 -6,5 -6,0 0 1,25 1,5 2,0 (MHz)

Remarque: fp ;porteuse vidéo
fA ;porteuse audio
f'p ;porteuse vidéo adjacente supérieure
f'A ;porteuse audio adjacente inférieure
IF ;38,9(MHz)

Fig. 7 – 8 Relation entre les fréquences porteuses vidéo et audio des système de télévision

### 7.8.2 Réglage de trappe

- Ce réglage est décrit séparément car la procédure de réglage de la section tuner dépendant du système de télévision utilisé.
- En ce qui concerne le signal à entrer, se reporter au Tableau 7-2. Connecter le signal à la borne d'entrée de l'antenne.
- Ajuster F13 et F19 de manière alternative pour obtenir le réglage optimal.

Tableau 7-2 Signaux d'entrée

• Utiliser le canal réservé au signal ①.

| N° de signal | Vidéo | Audio | Niveau d'entrée d'antenne | Canal |
|---|---|---|---|---|
| Signal ① | Barre de couleur | 1kHz, 100% modulation | 80dB$\mu$V | Canal libre |
| Signal ② | | | | Canal suivant supérieur au signal ①. |
| Signal ③ | | | | Canal suivant inférieur au signal ①. |

Remarque:Régler le niveau audio SG sur une valeur inférieure à celle du niveau d'entrée de l'antenne, en utilisant les valeurs suivantes.
•Système M : 6dB , •Système B : 10dB , •Système G : 10dB , •Système I : 7dB , •Système D : 7dB ,
•Système K : 7dB , •Système L : 10dB , •Système L' : 10dB

### • Pour le Système M

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 3-1 | Réglage de trappe vidéo adjacent | Signal ② | F12 (T) | Ajuster l'élément 32,9 MHz de TP-SAW IN (P-19) sur le minimum. |
| 3-2 | Réglage de trappe audio | Signal ① | F13, F19 (T) | Ajuster l'élément 34,4 MHz de TP-SAW IN (P-19) sur le minimum. |
| 3-3 | Réglage de trappe audio adjacent | Signal ③ | F18 (T) | Ajuster l'élément 40,4 MHz de TP-SAW IN (P-19) sur le minimum. |

### • Pour le système B

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 3-1 | Réglage de trappe vidéo adjacent | Signal ② | F12 (T) | Ajuster l'élément 31,9 MHz de TP-SAW IN (P-19) sur le minimum. |
| 3-2 | Réglage de trappe audio | Signal ① | F13, F19 (T) | Ajuster l'élément 33,4 MHz de TP-SAW IN (P-19) sur le minimum. |
| 3-3 | Réglage de trappe audio adjacent | Signal ③ | F18 (T) | Ajuster l'élément 40,4 MHz de TP-SAW IN (P-19) sur le minimum. |

### • Pour le système G

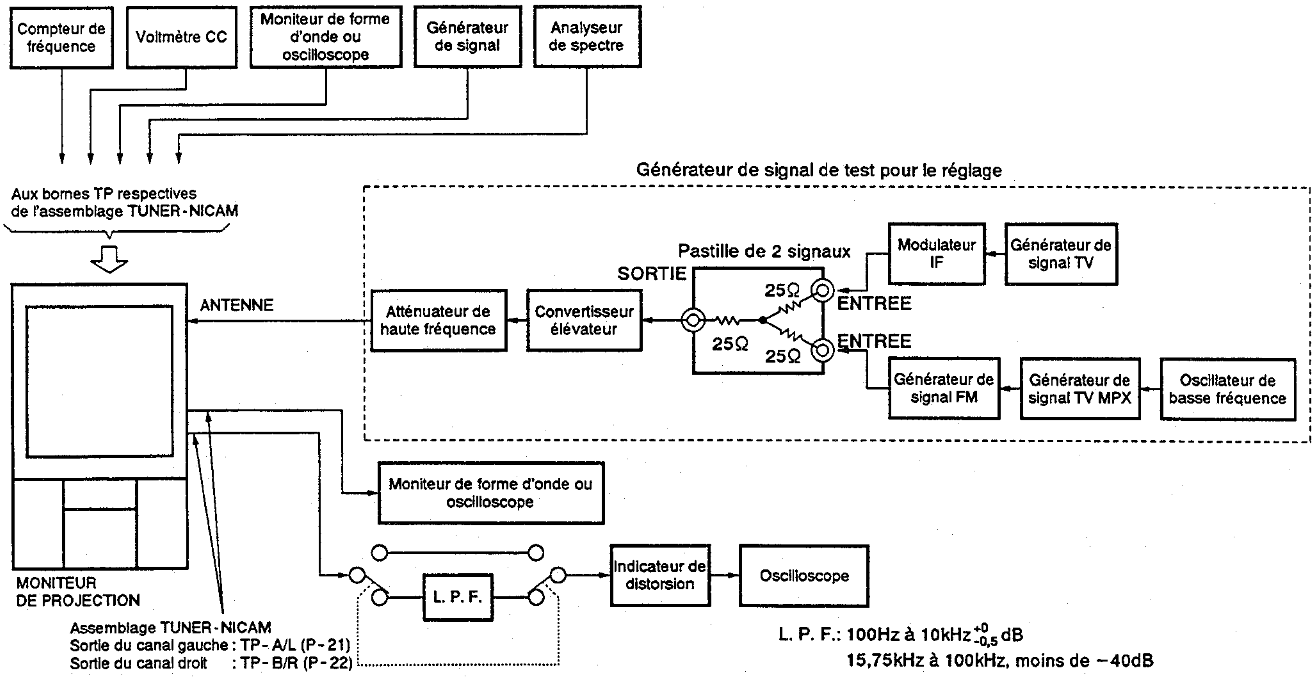
| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 3-1 | Réglage F12 | — | F12 (T) | Ajuster seulement quand l'image n'apparaît pas correctement. |
| 3-2 | Réglage de trappe audio | Signal ① | F13, F19 (T) | Ajuster l'élément 33,4 MHz de TP-SAW IN (P-19) sur le minimum. |
| 3-3 | Réglage F18 | — | F18 (T) | Ajuster seulement quand l'image n'apparaît pas correctement. |

## ● Pour le système I

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 3-1 | Réglage de trappe audio | Signal ① | F12 (T) | Ajuster l'élément 32,9 MHz de TP-SAW IN (P-19) sur le minimum. |
| 3-2 | Réglage F13 et F19 | —— | F13, F19 (T) | Ajuster seulement quand l'image n'apparaît pas correctement |
| 3-3 | Réglage F18 | —— | F18 (T) | |

## ● Pour le système D, K, L et L'

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 3-1 | Réglage de trappe audio | Signal ① | F12 (T) | Ajuster l'élément 32,4 MHz de TP-SAW IN (P-19) sur le minimum. |
| 3-2 | Réglage F13 et F19 | —— | F13, F19 (T) | Ajuster seulement quand l'image n'apparaît pas correctement |
| 3-3 | Réglage de trappe audio adjacent | Signal ③ | F18 (T) | Ajuster l'élément 40,4 MHz de TP-SAW IN (P-19) sur le minimum. |


Compteur de fréquence
Voltmètre CC
Moniteur de forme d'onde ou oscilloscope
Générateur de signal
Analyseur de spectre
Aux bornes TP respectives de l'assemblage TUNER-NICAM
Générateur de signal de test pour le réglage
Pastille de 2 signaux
SORTIE
25Ω
25Ω
25Ω
ENTREE
ENTREE
Modulateur IF
Générateur de signal TV
ANTENNE
Atténuateur de haute fréquence
Convertisseur élévateur
Générateur de signal FM
Générateur de signal TV MPX
Oscillateur de basse fréquence
Moniteur de forme d'onde ou oscilloscope
L. P. F.
Indicateur de distorsion
Oscilloscope
MONITEUR DE PROJECTION
Assemblage TUNER-NICAM
Sortie du canal gauche : TP-A/L (P-21)
Sortie du canal droit : TP-B/R (P-22)

L. P. F.: 100Hz à 10kHz $^{+0}_{-0,5}$ dB
15,75kHz à 100kHz, moins de −40dB

Fig. 7-9 Schéma de connexion lors du réglage de la section tuner

### 7.8.3 Réglage de la section NICAM

- Ce réglage est requis uniquement dans la zone multiplex audio B/G CCIR.
- Procéder à ce réglage après le réglage de la section TUNER à la section 7.8.1 et le réglage de trappe à la section 7.8.2.

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Réglage stéréo FM CCIR | Signal libre du signal multiplex audio B/G CCIR (STEREO ou DUAL) | F201 (T) | Brancher un oscilloscope à la broche 8 de IC202 et observer la forme de l'onde (Fig. 7-10).<br>Régler l'amplitude (Fig. 7-10 a) au maximum. |

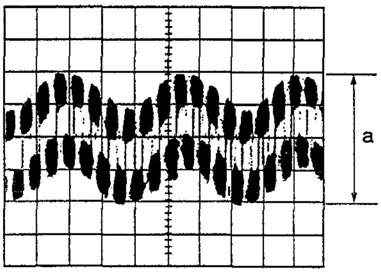


Fig. 7-10 Forme d'onde de la broche 8 de IC202

Ajust er " a " au maximum.

Remarque: Si ce rélage est mal réalisé, une onde d'amplitude plus petite et plus plate que celle illustré á la Fig. 7-10 sera affichée.

## 7.9 QUAND L'ASSEMBLAGE TUNER–NICAM EST REMPLACE

- Aucun réglage n'est requis.

## 7.10 QUAND L'ASSEMBLAGE AM–DEMOD EST REPARE

- Ce réglage est requis pour les Système L or L'.
- Les points de test de réglage(TP) se situent sur l'assemblage AM-DEMOD.

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Réglage de détection AM | Envoyer une chaîne du système L ou L' à la borne d'entrée de l'antenne. Le signal audio doit être 1kHz, 50 % de modulation, AM alors qu'il n'y a pas d'exigence pour le signal vidéo. | L1018 (A) | Ajuster de façon qu'une sinusoïde de 1 kHz sorte de la broche 5 de IC1012 avec une distorsion minimum et un niveau maximum. |
| 2 | Réglage du niveau audio | | VR1012 (A) | Ajuster de façon que le niveau de la sinusoïde de 1 kHz sortie de la broche 5 de IC1016 soit de 200 mV efficaces ± 50 mV. |

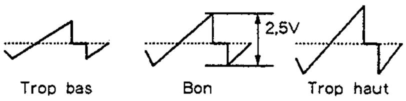
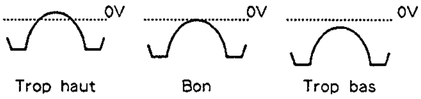
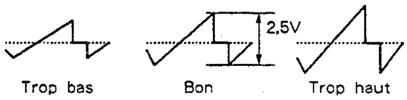
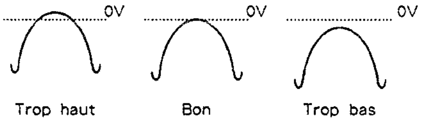
## 7.11 QUAND L'ASSEMBLAGE AM–DEMOD EST REMPLACE

- Aucun réglage n'est requis.

## 7.12 QUAND L'ASSEMBLAGE DE CONVERGENCE EST REPARE OU REMPLACE

### 7.12.1 REGLAGE DU NIVEAU SUPERIEUR DE L'ONDE PARABOLIQUE

- Les points de test de réglage(TP) se situent sur l'assemblage COVERGENCE.
- Procéder à ce réglage uniquement quand la convergence a bougé.

| N° d'étape | Article de réglage | Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | NIVEAU DE L'ONDE EN DENTS DE SCIE H | VR701 (C) | A TP-H.NOKO (P-805), régler le niveau de la forme d'onde de sortie sur 2,5 Vc-c.  |
| 2 | NIVEAU SUPERIEUR DE LA FORME DE L'ONDE PARABOLIQUE H | VR750 (C) | A TP-H.PARA (P-802), régler le niveau supérieur de la forme d'onde de sortie sur 0 V ± 20 mV.  |
| 3 | NIVEAU DE L'ONDE EN DENTS DE SCIE V | VR702(C) | A TP-V.NOKO (P-803), régler le niveau de la forme d'onde de sortie sur 2,5 Vc-c.  |
| 4 | NIVEAU SUPERIEUR DE LA FORME DE L'ONDE PARABOLIQUE V | VR749(C) | A TP-V.PARA (P-801), régler le niveau supérieur de la forme d'onde de sortie sur 0 V ± 20 mV.  |

### 7.12.2 REGLAGE DE CONVERGENCE

- Les mouvement de l'image et les points de réglage sont résumés aux Fig. 7-14 et 7-15.
- Le signal d'entrée est le signal de hachure en croix du système PAL.
- Effectuer le réglage de position par les touches de la télécommande, comme expliqué.
  (se reporter à la Fig. 7-11.)
- Tous les réglages terminés, libérer le court-circuit pour obtenir un écran blanc et procéder au préréglage.
- Corriger la ligne verticale avec le signal de correction horizontale et corriger la ligne horizontale avec le signal de correction verticale.
- Les points de réglage se situent sur l'assemblage CONVERGENCE.

※1: Ecran de réglage de convergence et fonctionnement

Ⓐ : Chaque fois que l'interrupteur de la section de réglage avant est enfoncé, l'affichage change les écrans ② à ⑨.
Ⓑ : Pour passer de ADJ ↓ ↑ à ADJ ←→ : appuyer sur la touche numérique 4 ou 6 de la télécommande.
Ⓑ' : Pour passer de ADJ ←→ à ADJ ↓ ↑ : appuyer sur la touche numérique 2 ou 8 de la télécommande.
Ⓒ : Avec l'écran ADJ ↓ ↑ l'affichage passe de l'écran ③, ⑤, ⑦ à ⑨ quand la touche numérique 5 de la télécommande est enfoncée.
Ⓒ' : Avec l'écran ADJ ←→ l'affichage passe de l'écran ②, ④, ⑥ à ⑧ quand la touche numérique 5 de la télécommande est enfoncée.

Réglage horizontal du rouge : Avec l'écran ② ou ⑥, appuyer sur la touche 2 (supérieure) ou 8 (inférieure) des touches numériques de la télécommande ou enclencher l'interrupteur SELECT/ADJ de l'appareil principal.
Réglage vertical du rouge : Avec l'écran ③ ou ⑦, appuyer sur la touche 4 (gauche) ou 6 (droite) des touches numériques de la télécommande ou enclencher l'interrupteur SELECT/ADJ de l'appareil principal.
Réglage horizontal du bleu : Avec l'écran ④ ou ⑧, appuyer sur la touche 2 (supérieure) ou 8 (inférieure) des touches numériques de la télécommande ou enclencher l'interrupteur SELECT/ADJ de l'appareil principal.
Réglage vertical du bleu : Avec l'écran ⑤ ou ⑨, appuyer sur la touche 4 (gauche) ou 6 (droite) des touches numériques de la télécommande ou enclencher l'interrupteur SELECT/ADJ de l'appareil principal.

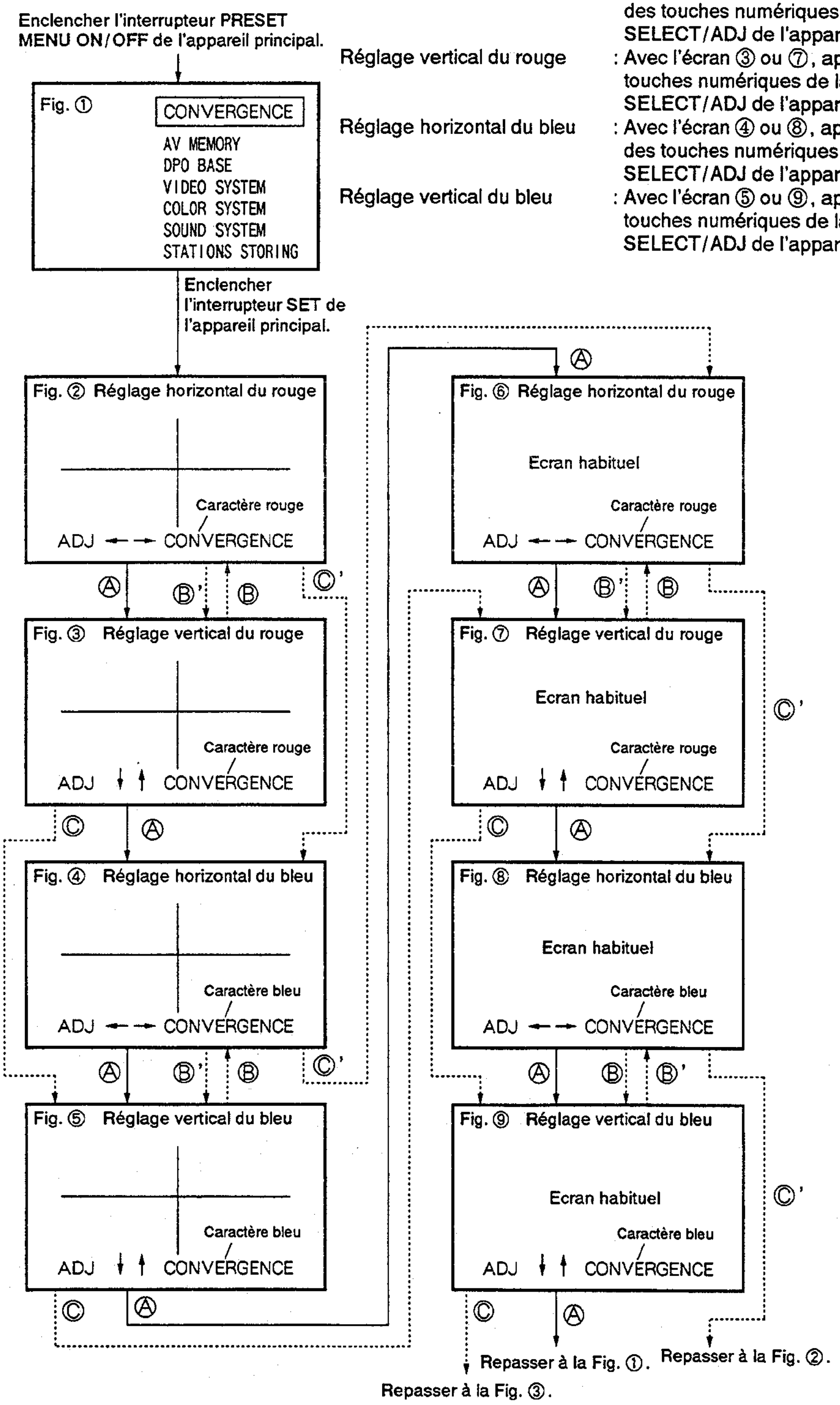

Enclencher l'interrupteur PRESET MENU ON/OFF de l'appareil principal.
Fig. ①
CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING
Enclencher l'interrupteur SET de l'appareil principal.
Fig. ② Réglage horizontal du rouge
Caractère rouge
ADJ ←→ CONVERGENCE
Fig. ③ Réglage vertical du rouge
Caractère rouge
ADJ ↓ ↑ CONVERGENCE
Fig. ④ Réglage horizontal du bleu
Caractère bleu
ADJ ←→ CONVERGENCE
Fig. ⑤ Réglage vertical du bleu
Caractère bleu
ADJ ↓ ↑ CONVERGENCE
Fig. ⑥ Réglage horizontal du rouge
Ecran habituel
Caractère rouge
ADJ ←→ CONVERGENCE
Fig. ⑦ Réglage vertical du rouge
Ecran habituel
Caractère rouge
ADJ ↓ ↑ CONVERGENCE
Fig. ⑧ Réglage horizontal du bleu
Ecran habituel
Caractère bleu
ADJ ←→ CONVERGENCE
Fig. ⑨ Réglage vertical du bleu
Ecran habituel
Caractère bleu
ADJ ↓ ↑ CONVERGENCE
Ⓐ
Ⓑ
Ⓑ'
Ⓒ
Ⓒ'
Repasser à la Fig. ①.
Repasser à la Fig. ②.
Repasser à la Fig. ③.

Fig. 7-11 Fonctionnement des touches sur l'écran de convergence

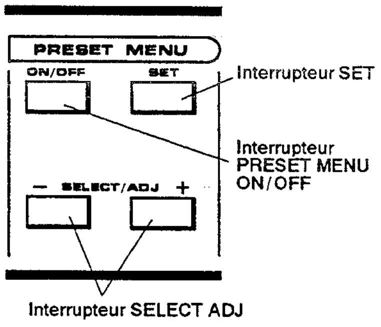

PRESET MENU
ON/OFF
SET
Interrupteur SET
Interrupteur PRESET MENU ON/OFF
— SELECT/ADJ +
Interrupteur SELECT ADJ

Fig. 7-12
Disposition des touches sur l'appareil principal

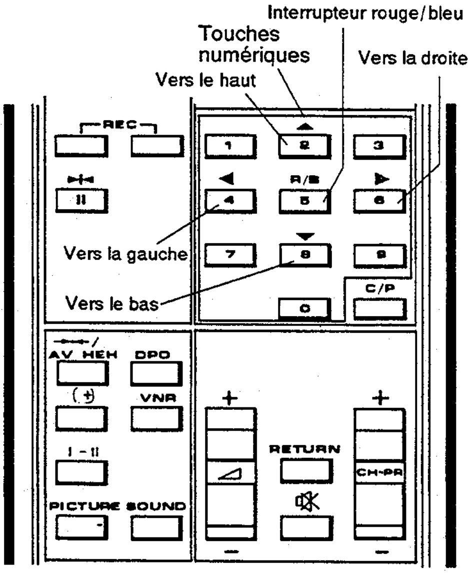

Interrupteur rouge/bleu
Touches numériques
Vers la droite
Vers le haut
REC
1
2
3
R/B
4
5
6
7
8
9
0
C/P
Vers la gauche
Vers le bas
AV HEH
DPO
VNR
I - II
RETURN
CH-PR
PICTURE
SOUND
+
—

Fig.7-13
Disposition des touches sur la télécommande

### (1) AJUSTEMENT DE LIGNE VERTE

- Comme les lignes vertes sont utilisées en tant que référence lors du réglage du rouge et du bleu, veiller à ce qu'elles soient ajustées de manière précise.
- Court-circuiter TP-R (TP-375), TP-B (TP-374) et TP-GND (TP-377) de l'assemblage VIDEO-AUDIO. Ensuite, les lignes vertes apparaissent sur l'écran. Le réglage de ligne verte terminé, enlever le court-circuit.

| N ° d'étape | Article de réglage | Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | GH-PIN | VR705 (C) | Ajuster la ligne verte sur une ligne droite (se reporter aux Fig. 7-14 et 7-15). |
| 2 | GH-KEY | VR704 (C) | |
| 3 | GV-SKEW | VR706 (C) | |
| 4 | GV-BOW | VR707 (C) | |
| 5 | GV-KEY | VR708 (C) | |
| 6 | GV-S-KEY | VR709 (C) | |
| 7 | GV-PIN | VR710 (C) | |
| 8 | Répéter les étapes 1 à 7 jusqu'à obtention de la meilleure image possible. | | |

## (2) AJUSTEMENT DE LIGNE ROUGE

- Court-circuiter TP-B (TP-374) et TP-GND (TP-377) de l'assemblage VIDEO-AUDIO. Ensuite, les lignes vertes et les lignes rouges apparaissent sur l'écran. Le réglage de ligne rouge terminé, enlever le court-circuit.
- Ajuster chaque VR de façon que les lignes rouges convergent avec les lignes vertes pour obtenir des lignes jaunes
- Après l'ajustement, proccéder au réglage fin en observant la totalité de l'écran.

### • Réglage de compensation de distorsion horizontale du rouge

| N° d'étape | Article de réglage | Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | RH-SKEW | VR711 (C) | Ajuster les lignes verticales rouges, au centre de l' écran, sur des lignes droites sans distorsion et non inclinées (se reporter à la Fig. 7-14). |
| 2 | RH-BOW | VR712 (C) | |
| 3 | Répéter les étapes 1 et 2. | | |
| 4 | RH-KEY | VR713 (C) | Ajuster les lignes verticales rouges, à droite et à gauche de l'écran sur des lignes droites, non inclineés (se reporter à la Fig. 7-14). |
| 5 | RH-S-KEY | VR714 (C) | |
| 6 | Répéter les étapes 4 et 5. | | |
| 7 | RH-PIN | VR715 (C) | Ajuster les lignes verticales rouges, à droite et à gauche de l'écran sur des lignes droites, sans distorsion (se reporter à la Fig. 7-14). |
| 8 | RH-S-PIN | VR716 (C) | |
| 9 | Répéter les étapes 7 et 8 ou les étapes 1 à 8. | | |

### • Réglage de compensation d'intervalle horizontale du rouge

| N° d'étape | Article de réglage | Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | RH-POSITION | Touche 4 et 6 de la télécommande | Ajuster de façon que les lignes verticales rouges convergent vers les lignes verticales vertes, au centre de l'écran, pour obtenir des lignes jaunes. Ceci sert de réglage de référence, mais si les lignes divergent pendant le réglage, procéder à ce réglage après avoir évalué la divergence. |
| 2 | RH-LIN | VR717 (C) | Ajuster de façon que les lignes verticales rouges convergent avec les lignes verticales vertes, à droite et à gauche de l'écran, pour obtenir des lignes jaunes (se reporter à la Fig. 7-14). |
| 3 | RH-4-LIN | VR720 (C) | |
| 4 | RH-S-LIN | VR718 (C) | |
| 5 | RH-SIZE | VR719 (C) | |
| 6 | Répéter les étapes 1 et 5. | | |

### • Réglage de compensation de distorsion verticale du rouge

| N° d'étape | Article de réglage | Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | RV-SKEW | VR721 (C) | Ajuster les lignes horizontales rouges, au centre de l'céran, sur des lignes droites sans distorsion et non inclinées (se reporter à la Fig. 7-15). |
| 2 | RV-BOW | VR722 (C) | |
| 3 | Répéter les étapes 1 et 2. | | |
| 4 | RV-KEY | VR723 (C) | Ajuster les lignes horizontales rouges du bas et du haut de l'écran sur des lignes droites non inclinées (se reporter à la Fig. 7-15). |
| 5 | RV-S- | VR724 (C) | |
| 6 | RV-S-PIN | VR726 (C) | |
| 7 | RV-PIN | VR725 (C) | |
| 8 | Répéter les étapes 4 et 7 ou les étapes 1 à 7. | | |

### • Réglage de compensation d'intervalle verticale du rouge

| N° d'étape | Article de réglage | Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | RV-LIN | VR727 (C) | Ajuster de façon que les lignes horizontales rouges convergent vers les lignes horizontales vertes, au centre de l'écran, pour obtenir des lignes jaunes. Ceci sert de réglage de référence, mais si les lignes divergent pendant le réglage, procéder à ce réglage aprés avoir évalué la divergence (se reporter à la Fig. 7-15). |
| 2 | RV-S-LIN | VR729 (C) | |
| 3 | RV-POSITION | Touches 2 et 8 de la télécommande | |
| 4 | RV-SIZE | VR728 (C) | Ajuster de façon que les lignes horizontales rouges convergent avec les lignes horizontales vertes, du bas et du haut de l'écran, pour obtenir des lignes jaunes (se reporter à la Fig. 7-15). |
| 5 | Répéter les étapes 1 à 4. | | |

### (3) AJUSTEMENT DE LIGNE BLEU

- Court-circuiter TP-R(TP-375) et TP-GND(TP-377) de l'assemblage VIDEO-AUDIO. Ensuite, les lignes vertes et les lignes bleues apparaissent sur l'écran. Le réglage de ligne bleue terminé enlever le court-circuit.
- Ajuster chaque VR de façon que les lignes bleues convergent avec les lignes vertes pour obtenir des lignes cyan.
- Après l'ajustement, procéder au réglage fin en observant la totalité de l'écran.

**● Réglage de compensation de distorsion horizontale du bleu**

| N° d'étape | Article de réglage | Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | BH-SKEW | VR730 (C) | Observer les lignes verticales bleues de l'écran et les ajuster de la même manière que pour le réglage de compensation de distorsion horizontale du rouge. |
| 2 | BH-BOW | VR731 (C) | |
| 3 | BH-KEY | VR732 (C) | |
| 4 | BH-S-KEY | VR733 (C) | |
| 5 | BH-PIN | VR734 (C) | |
| 6 | BH-S-PIN | VR735 (C) | |

**● Réglage de compensation d'intervalle horizontale du bleu**

| N° d'étape | Article de réglage | Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | BH-POSITION | Touches 4 et 6 de la télécommande | Ajuster de façon que les lignes verticales bleues convergent vers les lignes verticales vertes pour obtenir des lignes cyan, de la même manière que pour le réglage de compensation d'intervalle horizontal du rouge. |
| 2 | BH-LIN | VR736 (C) | |
| 3 | BH-4-LIN | VR739 (C) | |
| 4 | BH-S-LIN | VR737 (C) | |
| 5 | BH-SIZE | VR738 (C) | |

**● Réglage de compensation de distorsion verticale du bleu**

| N° d'étape | Article de réglage | Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | BV-SKEW | VR740 (C) | Observer les lignes horizontales bleues de l'écran et les ajuster de la même manière que pour le réglage de compensation de distorsion verticale du rouge. |
| 2 | BV-BOW | VR741 (C) | |
| 3 | BV-KEY | VR742 (C) | |
| 4 | BV-S-KEY | VR743 (C) | |
| 5 | BV-S-PIN | VR745 (C) | |
| 6 | BV-PIN | VR744 (C) | |

**● Réglage de compensation d'intervalle verticale du bleu**

| N° d'étape | Article de réglage | 7Point de réglage | Procédure de réglage |
|---|---|---|---|
| 1 | BV-LIN | VR746 (C) | Ajuster de façon que les lignes horizontales bleues convergent vers les lignes horizontales vertes pour obtenir des lignes cyan, de la même manère que pour le réglage de compensation d'intervalle vertical du rouge. |
| 2 | BV-S-LIN | VR748 (C) | |
| 3 | BV-POSITION | Touches 2 et 8 de la télécommande | |
| 4 | BV-SIZE | VR747 (C) | |

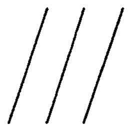
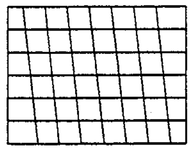
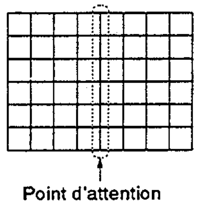
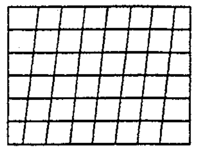
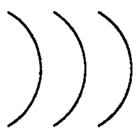
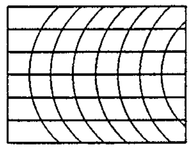
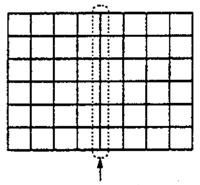
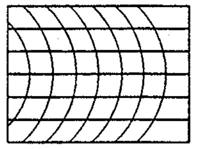
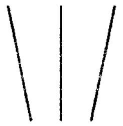
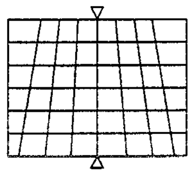
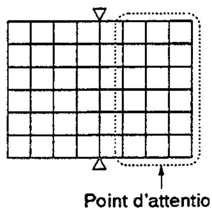
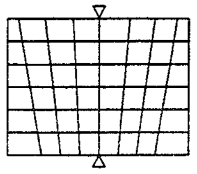
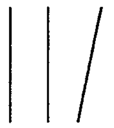
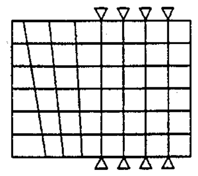
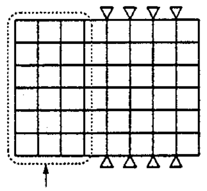
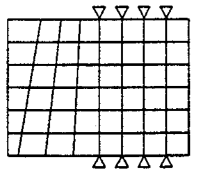
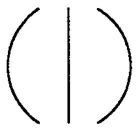
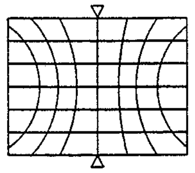
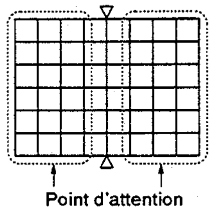
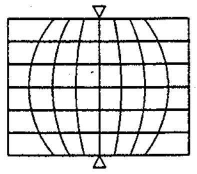
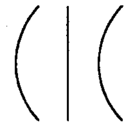
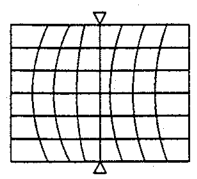
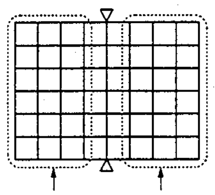
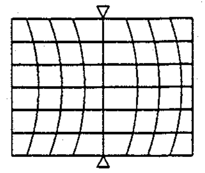
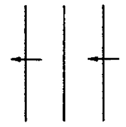
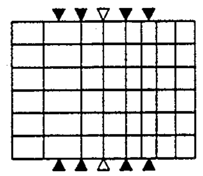
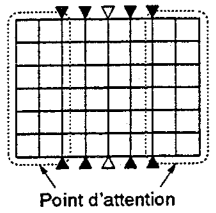
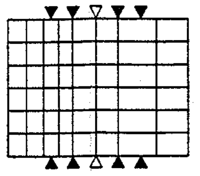
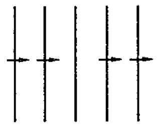
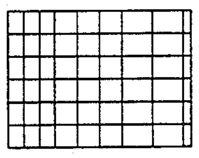
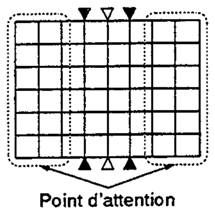
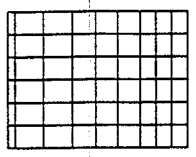
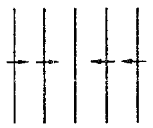
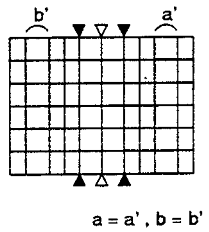
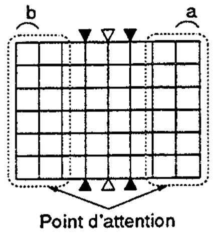
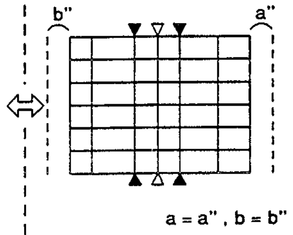
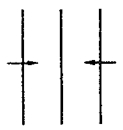
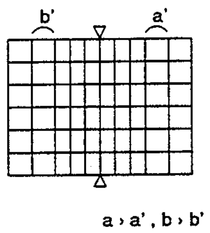
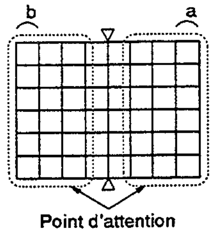
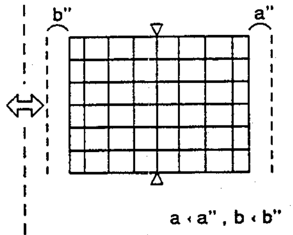
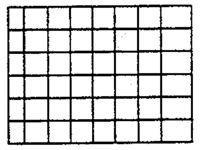
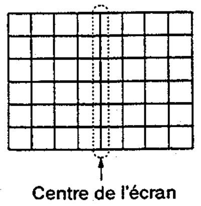
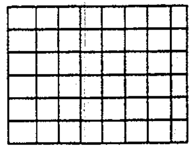
| Compensation | Signal et repère *1 | Ecran déformé | Ecran corrigé | Ecran déformé | Point de réglage | |
|---|---|---|---|---|---|---|
| Compensation de distorsion horizontale | H-SKEW<br> |  |  |  | Observer les lignes verticales au centre de l'écran(où il n'y a pas de mouvement H-KEY, H-S-KEY, H-PIN ni H-S-PIN), puis ajuster les lignes verticales pour éliminer l'inclinaison. | Pour obtenir les meilleures lignes possibles, ajuster les lignes verticales au centre de l'écran en suivant la procédure de réglage de H-SKEW et H-BOW. |
| | H-BOW<br> |  |  |  | Observer les lignes verticales au centre de l'écran, puis transformer les lignes courbées en lignes droites. | |
| | H-KEY<br> |  |  |  | Observer les lignes verticales sur la droite de l'écran(où il n'y a pas de mouvement H-S-KEY), puis ajuster les lignes verticales pour éliminer l'inclinaison. | Pour éliminer l'inclinaison, ajuster les lignes verticales sur la droite et la gauche de l'écran en suivant la procédure de réglage de H-KEY et H-S-KEY. |
| | H-S-KEY<br> |  |  |  | Observer les lignes verticales sur la gauche de l'écran, puis ajuster les lignes verticales pour éliminer l'inclinaison. | |
| | H-PIN<br> |  |  |  | Observer les lignes verticales sur la droite et la gauche de l'écran, puis ajuster les lignes courbes pour rendre la droite et la gauche symétriques par H-S-PIN. Ensuite, transformer les lignes verticales courbes de la droit et de la gauche de l'écran en lignes droites par H-PIN. | Pour éliminer la distorsion, redresser les lignes verticales de la droite et de la gauche de l'écran en suivant la procédure de réglage H-PIN et H-S-PIN. |
| | H-S-PIN<br> |  |  |  | | |

Fig. 7-14 Compensation horizontale

| Compensation | Signal et repère *1 | Ecran déformé | Ecran corrigé | Ecran déformé | Point de réglage | |
|---|---|---|---|---|---|---|
| Compensation d'intervalle horizontal | H- LIN  |  |  |  | Ajuster en suivant la procédure de réglage de H-LIN, H-4-LIN et H-S-LIN(se souvenir du degré du mouvement H-SIZE) de façon que l'intervalle entre les lignes verticales sur la droite soit identique à celui sur la gauche, par rapport à un point central fixe. Par exemple, quand les lgnes verticales de la droite de l'écran sont déplacées vers la droite, déplacer les lignes verticales de la gauche vers la gauche, au même degré que celui de la droite. | Les lignes verticales au centre de l'écran converge vers les lignes vertes avec H-POSITION. En outre, les lignes verticales sur la droite et la gauche de l'écran convergent vers les lignes vertes avec H-LIN, H-4-LIN, H-S-LIN et H-SIZE. |
| | H-4-LIN  |  |  |  | | |
| | H-S-LIN  |  |  |  | | |
| | H-SIZE  |  |  |  | Faire converger les lignes verticales de la droite et la gauche de l'écran vers les lignes vertes. | |
| | H-POSITION |  |  |  | Les lignes verticales de l'écran se déplacent parallélement à droite et gauche grâce au réglage de convergence de la télécommande ou de l'appareil principal. Quand les lignes verticales se déplacent à volonté prendre le degré du mouvement en considération. | |

Remarque: KEY est l'abrréiation de KEYSTONE
et LIN, celle de LINEARITY.
▽ : indique les points fixes
▼ : indiquent les points qui bougent à peine
*1: Le dessin est imprimé sur laplaquette des circuits imprimés.

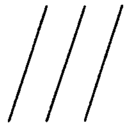
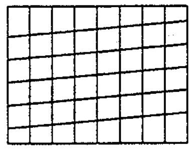
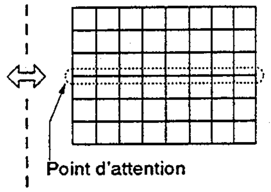
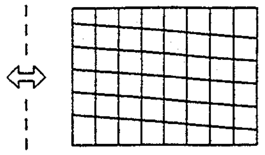
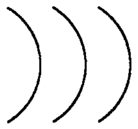
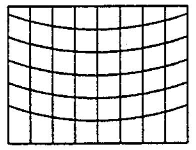
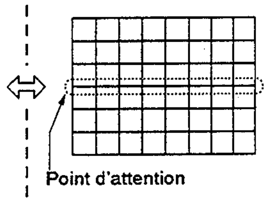
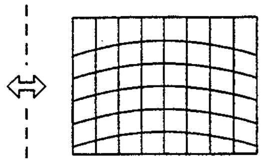
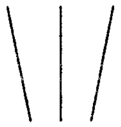
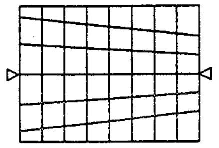
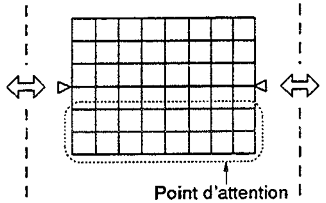
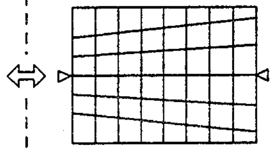
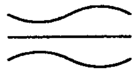
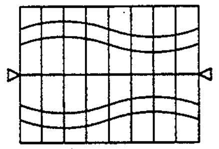
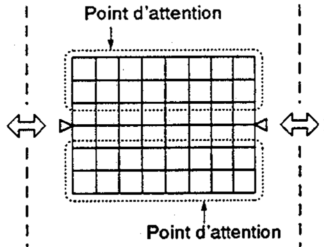
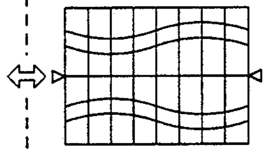
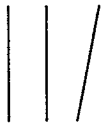
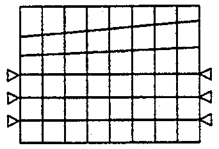
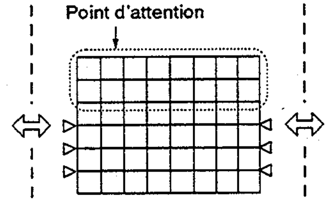
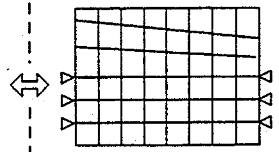
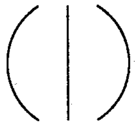
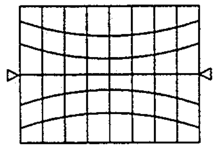
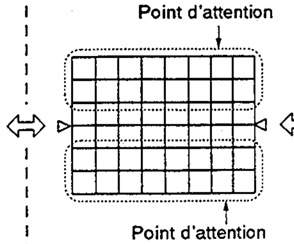
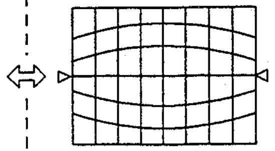
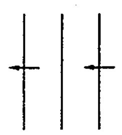
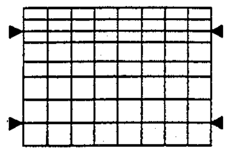
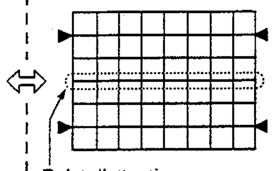
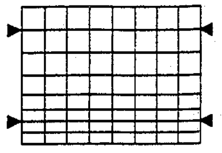
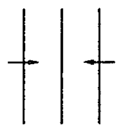
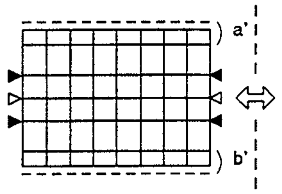
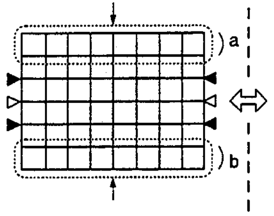
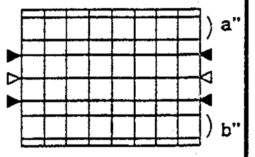
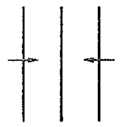
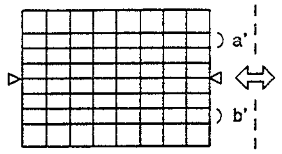
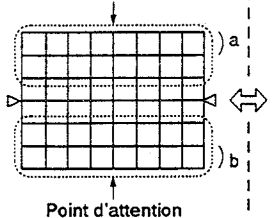
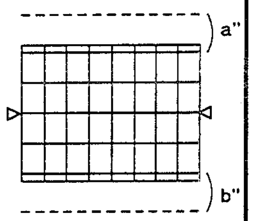
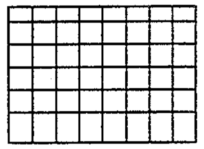
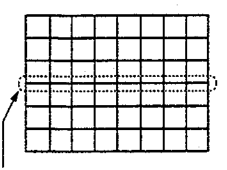
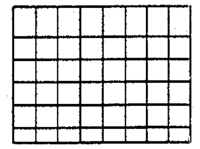
| Compensation | Signal et repère *1 | Ecran déformé | Ecran corrigé | Ecran déformé | Point de réglage | |
|---|---|---|---|---|---|---|
| Compensation de distorsion verticale | V-SKEW  |  |  |  | Observer les lignes horizontales au centre de l'écran(où il n'y a pas de mouvement V-KEY, V-S-KEY, ou V-PIN), puis ajuster les lignes horizontales pour éliminer l'inclinaison. | Pour obtenir les meilleures lignes possibles, ajuster les lignes horizontales au centre de l'écran en suivant la procédure de réglage de V-SKEW et V-BOW. |
| | V-BOW  |  |  |  | Observer les lignes horizontales au centre de l'écran, puis transformer les lignes courbées en lignes droites. | |
| | V-KEY  |  |  |  | Observer les lignes horizontales du bas de l'écran(où il n'y a pas de mouvement V-S-KEY), puis ajuster les lignes horizontales pour éliminer l'inclinaison. | Pour éliminer l'inclinaison, ajuster les lignes horizontales du bas et du haut de l'écran en suivant la procédure de réglage de V-KEY, V-S-PIN et V-S-KEY. |
| | V-S-PIN  |  |  |  | Observer les lignes horizontales du haut et du bas de l'écran, puis transformer les lignes courbes en lignes droites. | |
| | V-S-KEY  |  |  |  | Observer les lignes horizontales du haut de l'écran, puis ajuster les lignes horizontales pour éliminer l'inclinaison. | |
| | V-PIN  |  |  |  | Observer les lignes horizontales du haut et du bas de l'écran, puis transformer les lignes courbes en lignes droites. | Pour éliminer la distorsion, redresser les lignes horizontales du haut et du bas de l'écran en suivant la procédure de réglage V-PIN. |

Fig. 7-15 Compensation vertic

| Compensation | Signal et repère | Ecran déformé | Ecran corrigé | Ecran déformé | Point de réglage | |
|---|---|---|---|---|---|---|
| Compensation d'intervalle vertical | V- LIN<br> |  | <br>Point d'attention |  | Faire converger les lignes horizontales du centre de l'écran vers les lignes vertes. A cette étape, veiller à ce que l'intervalle de ligne horizontale du haut de l'écran soit identique à celui du bas de l'écran, par rapport à un point central fixe. Cependant, si le même intervalle n'est pas obtenu, ajuster de nouveau POSITION, V-LIN et V-S-LIN. | Les lignes horizontales du centre de l'écran convergent vers la ligne verte avec V-LIN, V-S-LIN et V-POSITION. En outre, les lignes horizontales du haut et du bas de l'écran convergent vers la ligne verte avec V-SIZE. |
| | V-S- LIN<br> |  <br>a' = a , b' = b | Point d'attention<br> |  <br>a" = a , b" = b | | |
| | V- SIZE<br> |  <br>a' ‹ a , b' ‹ b | Point d'attention<br> <br>Point d'attention |  <br>a" › a , b" › b | Faire converger les lignes horizontales du haut et du bas de l'écran vers les lignes vertes. | |
| | V- POSITION |  | <br>Centre de l'écran |  | Les lignes horizontales de l'écran se déplacent parallèlement au haut et au bas de l'écran grâce au réglage de convergence de la télécommande ou de l'appareil principal. Quand les lignes horizontales se déplacent à volonté, prendre le degré du mouvement en considération. | |

Remarque: KEY est l'abréviation de KEYSTONE et LIN, celle de LINEARITY.
▽ : indique les points fixes
▼ : indiquent les points qui bougent à peine

ıle

## 7.13 QUAND L'ASSEMBLAGE DU MICROCOMPUTER EST REPARE

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Lors du remplacement de IC307(X24C08P) de l'assemblage du MICROCOMPUTER, la norme PIONEER, la base DPO et la position de convergence sont ramenées au centre de leur plage de variation. Les réajuster en fonction des procédures de réglage spécifiées. Les réglages de l'utilisateur sont également à recommencer, en fonction des prréférences de l'utilisateur. | | | |
| 2 | Réglage de position du télop | Signal vidéo libre | VR301 (M) | Produire le signal de croix d'essai et régler la croix au centre de l'écran. |

## 7.14 QUAND L'ASSEMBLAGE DU MICROCOMPUTER EST REMPLACE

- Régler la position du télop comme décrit à la section 7.13, puis effectuer les réglages de l'utilisateur.

## 7.15 QUAND L'ASSEMBLAGE I/O-TEXT EST REPARE

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Réglage de sortie VCO de 13,5 MHz | Pas de signal entré | L605 (I) | Ajuster la fréquence d'oscillation à la broche 17 de IC 602 de l'assemblage I/O-TEXT sur 13,5 MHz ± 100 kHz. |

## 7.16 QUAND L'ASSEMBLAGE I/O-TEXT EST REMPLACE

- Aucun réglage n'est requis.

## 7.17 QUAND L'ASSEMBLAGE DPO EST REPARE

- Ajuster la sensibilité DPO comme décrit à la section 7.26.

## 7.18 QUAND L'ASSEMBLAGE DPO EST REMPLACE

- Aucun réglage n'est requis.

## 7.19 QUAND L'ASSEMBLAGE DYNAMIC FOCUS EST REPARE OU REMPLACE

- Vérifier la mise au point(aux quatre coins de l'écran). Si la mise au point n'est pas parfaite, ajuster VR1 pour obtenir le réglage optimal.

## 7.20 QUAND L'ASSEMBLAGE HIGH VOLTAGE CONTROL EST REPARE OU REMPLACE

- Au besoin, vérifier H.SIZE, V.SIZE et la convergence.

## 7.21 QUAND L'ASSEMBLAGE R, G OU B CRT DRIVE EST REPARE OU REMPLACE

- La balance du blanc doit fournir la meilleure image possible. Dans la négative, ajuster la balance du blanc comme suit.

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Réglage de la balance du blanc | Emission ordinaire | Ecran (VR1)<br>(R)<br>(B) | Régler le blanc si l'ajustement correct ne peut être ajusté comme suit. Régler COLOR par la télécommande sur le minimum, puis ajuster les VR de l'écran pour obtenir la meilleure image possible. |

## 7.22 QUAND L'ASSEMBLAGE CRT R, G OU B EST REPARE OU REMPLACE

- La procdéure de remplacement de l'assemblage CRT R, G ou B est décrite à la section "8. Remplacement de l'assemblage CRT".
- Quand un ou deux tubes est remplacé, faire correspondre le nouveau tube avec celui qui est resté. Si les trois tubes sont remplacés, ajuster d'abord le tube du vert, puis ajuster les deux autres par rapport au tube du vert.

| N° d'étape | Article de réglage | Signal d'entrée | Point de réglage | Procédure de réglage |
|---|---|---|---|---|
| 1 | Angle du bloc de balayage et réglage de centrage | Signal en croix (ou le signal en croix d'essai de la convergence). Se reporter à la Fig. 7-13. | Centrage de l'aimant du bloc de balayage de l'assemblage CRT remplacé Se reporter à la Fig. 7-19. | Ajuster l'angle du bloc de balayage jusqu'à ce que la croix colorée assemblage CRT remplacé. soit parallèle à la croix colorée d'un tube cathodique qui est resté. |
| | | | | Réinitialiser la position de convergence (en activant CNT à MAX (MIN) à CNT en mode FACTORY ADJ), quand le assemblage CRT rouge ou bleu est remplacé. |
| | | | | Ajuster l'aimant de centrage du bloc de balayage dans le assemblage CRT remplacé jusqu'à ce que la croix converge. |
| 2 | Réglage de la mise au point | Hachure en croix | VR (VR1) de la mise au point couleur remplacée et l'assemblage d'objectif connecté l'assemblage CRT remplacé (se reporter aux Fig. 7-20 et 7-21). | Ajuster la mise au point de l'assemblage CRT remplacé sur l'état optimal. Le fait de déplacer la convergence facilite l'observation. Dans ce cas, veiller la remettre sur la position d'origine quand le réglage est terminé. |
| 3 | Réglage de convergence | | Faire correspondre la convergence de couleur de l'assemblage CRT remplacé avec la couleur d'un assemblage qui n'a pas été remplacé. Voir la section 7.12.2 REGLAGE DE CONVERGENCE pour les détails sur la procédure d'équilibrage des couleurs. Quand l'assemblage CRT G (vert) est remplacé équluilibrer la convergence des couleurs R, G et B. | |
| 4 | Balance du blanc | Signal de barre couleur sans signal couleur | Ecran VR (VR1)<br>VR651 (R) } VR (V)<br>VR653 (B) } d'entraînement | Régler la qualité de l'image sur la norme par la télécommande. |
| | | | | Ajuster VR de l'écran couleur remplacé jusqu'à ce que du gris soit visible dans la zcouleur de la zone sombre. |
| | | | | Ajuster VR d'entraînement de la couleur jusqu'à ce que la couleur de la zone claire vire au blanc. Quand l'assemblage CRT G est remplacé ajuster légérement les VR d'entraînement [R] et [B]. |
| | | | | Ajuster la luminosité normalisée PIONEER uniquement quand les ajustements susmentionnés n'ont pu s'effectuer à cause d'une luminosit anormale. |
| 5 | Réglages standard PIONEER | Ajuster comme décrit aux étape 8 à 14 de la section 7.6.1. | | |

## 7.23 QUAND L'ASSEMBLAGE DE L'OBJECTIF EST REMPLACE

- Déposer la pellicule gaufrée et le remplacer par le papier-calque fixé avec du ruban adhésif (se reporter à la Fig. 7-20). Ajuster la mise au point de l'assemblage de l'objectif nouvellement installé, en observant l'image projetée sur le papier-calque.

## 7.24 QUAND D'AUTRES ASSEMBLAGES SONT REPARES OU REMPLACES

- Aucun réglage n'est requis.

## 7.25 REGLAGE DE BASE DPO

La fonction DPO possède une section DPO photosensible sur le panneau de commande avant, destinée à juger le niveau de la lumière externe quand l'interrupteur DPO du panneau avant(S859) est enclenché(ON), ce qui par conséquent permet de faire correspondre la qualité d'image du MONITEUR DE PROJECTION(contraste, couleur et luminosité avec la lumière externe.

Deux types normalisés de qualité d'image DPO sont disponibles. Quand l'atmosphère est lumineuse, la première qualité DPO(DPO LIGHT) est choisie. Quand l'atmosphère est sombre, la deuxième qualité DPO(DPO DARK) est choisie. Les données relatives à ces deux qualités DPO sont mémorisées sur IC307(mémorie non volatile).

Par conséquent, si IC307(ou les circuits périphériques) est reparé ou si l'assemblage MICROCOMPUTER est remplacé la qualité d'image doit être à nouveau mémorisée.

Pour mémoriser les données de qualité d'image DPO, se reporter au mode d'emploi. Les valeurs réglées en usine sont présentées ici uniquement à titre de référence, car elles sont sujettes aux changements.

- DPO LIGHT
  - ⊛ (COULEUR) : 0
  - ◑ (CONTRASTE) : 0
  - ☼ (LUMINOSITE) : 0
- DPO DARK
  - ⊛ (COULEUR) : −2
  - ◑ (CONTRASTE) : −15
  - ☼ (LUMINOSITE) : +3

Remarque: Pour ce réglage, il est inutile d'entrer en mode FACTORY ADJ.

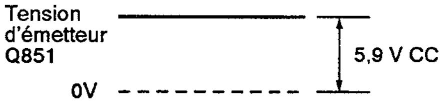
## 7.26 AJUSTEMENT DE LA SENSIBILITE DPO

La sensibilité de la section DPO photosensible est réglée pour déterminer le niveau de la luminosité externe auquel la fonction DPO s'enclenche. Ce réglage est effectué par VR851 de l'assemblage DPO(se reporter à la Fig. 7-21). et doit être réalisé en fonction des préférences de l'utilisateur. La procédure de réglage utilisée en usine est donnée à titre de référence.

(1) En utilisant une ampoule incandescante comme source de lumière, la lumière est projetée directement dans la section DPO photosensible avec un niveau d'intensité de 50 lux au DPO.

(2) Enclencher l'interrupteur DPO(S859). Le message "DPO ON" apparaît sur l'écran.

(3) VR851 de l'assemblage DPO est ajustée pour obtenir une tension de 5,9 V(± 1 V) sur l'émetteur Q851.



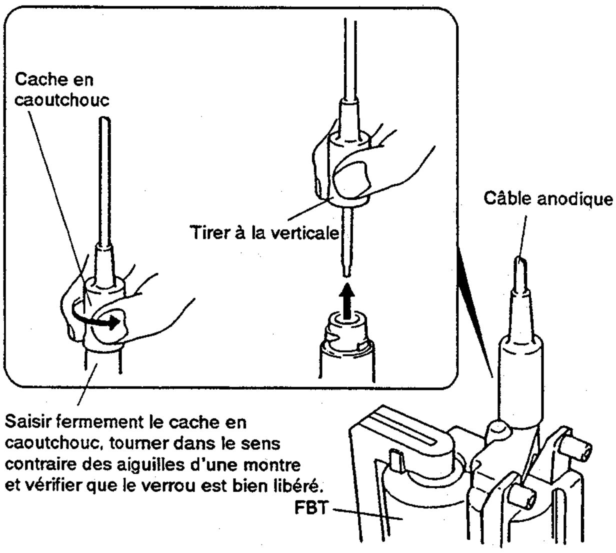
## 7.27 METHODE DE MESURE DE LA TENSION ANODIQUE

Débrancher le câble anodique FBT comme illustré à la Fig. 7-16. Mesurer le point où le câble entre dans le FBT.

Attention: Prendre des préautions supplémentaires lors de la mesure de cette haute tension. Des hautes tensions sont présentes sur les plaquettes des circuits avoisinnants(assemblage CRT DRIVE, assemblage POWER SUPPLY-DEFLECTION).

> **AVERTISSEMENT AU REPARATEUR**
>
> Avant de débrancher le câble anodique, couper l'alimentation, débrancher la fiche secteur et laisser l'appareil se décharger pendant plus d'une minute.

Remarque: Vérifier l'extension du cache en caoutchouc avant de débrancher le câble.



Saisir fermement le cache en caoutchouc, tourner dans le sens contraire des aiguilles d'une montre et vérifier que le verrou est bien libéré.

Remarque: Lors du rebranchement du câble, procéder dans l'ordre inverse. Aprés le rebranchement, tirer sur le câble pour vérifier qu'il est bien remis en place.

Fig. 7-16 Débranchement du câble anodique

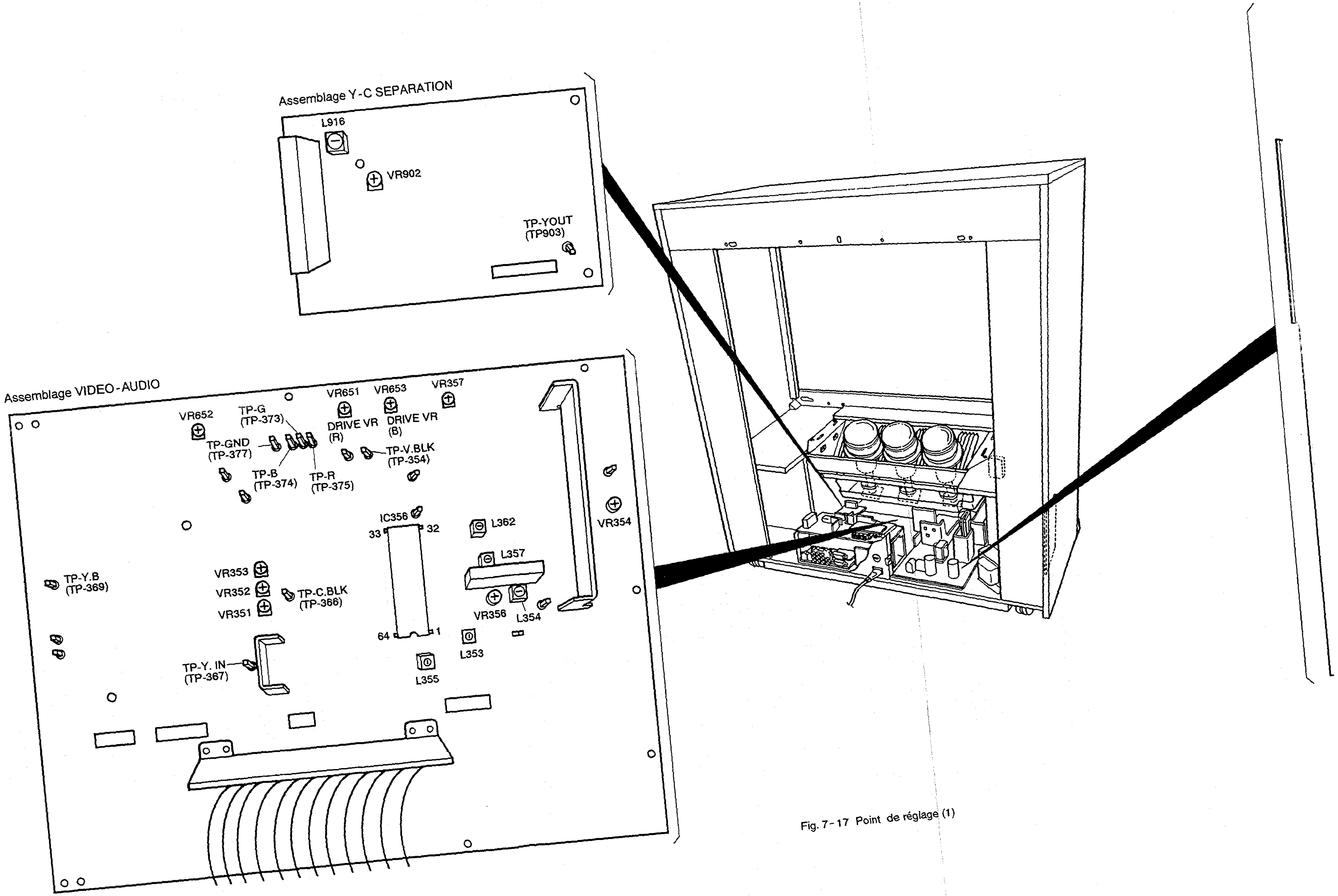

Assemblage Y-C SEPARATION
L916
VR902
TP-YOUT
(TP903)
Assemblage VIDEO-AUDIO
VR652
TP-G
(TP-373)
VR651
VR653
VR357
DRIVE VR
(R)
DRIVE VR
(B)
TP-GND
(TP-377)
TP-V.BLK
(TP-354)
TP-B
(TP-374)
TP-R
(TP-375)
IC356
33
32
L362
VR354
L357
TP-Y.B
(TP-369)
VR353
VR352
VR351
TP-C.BLK
(TP-366)
VR356
L354
64
1
L353
TP-Y. IN
(TP-367)
L355

Fig. 7-17 Point de réglage (1)

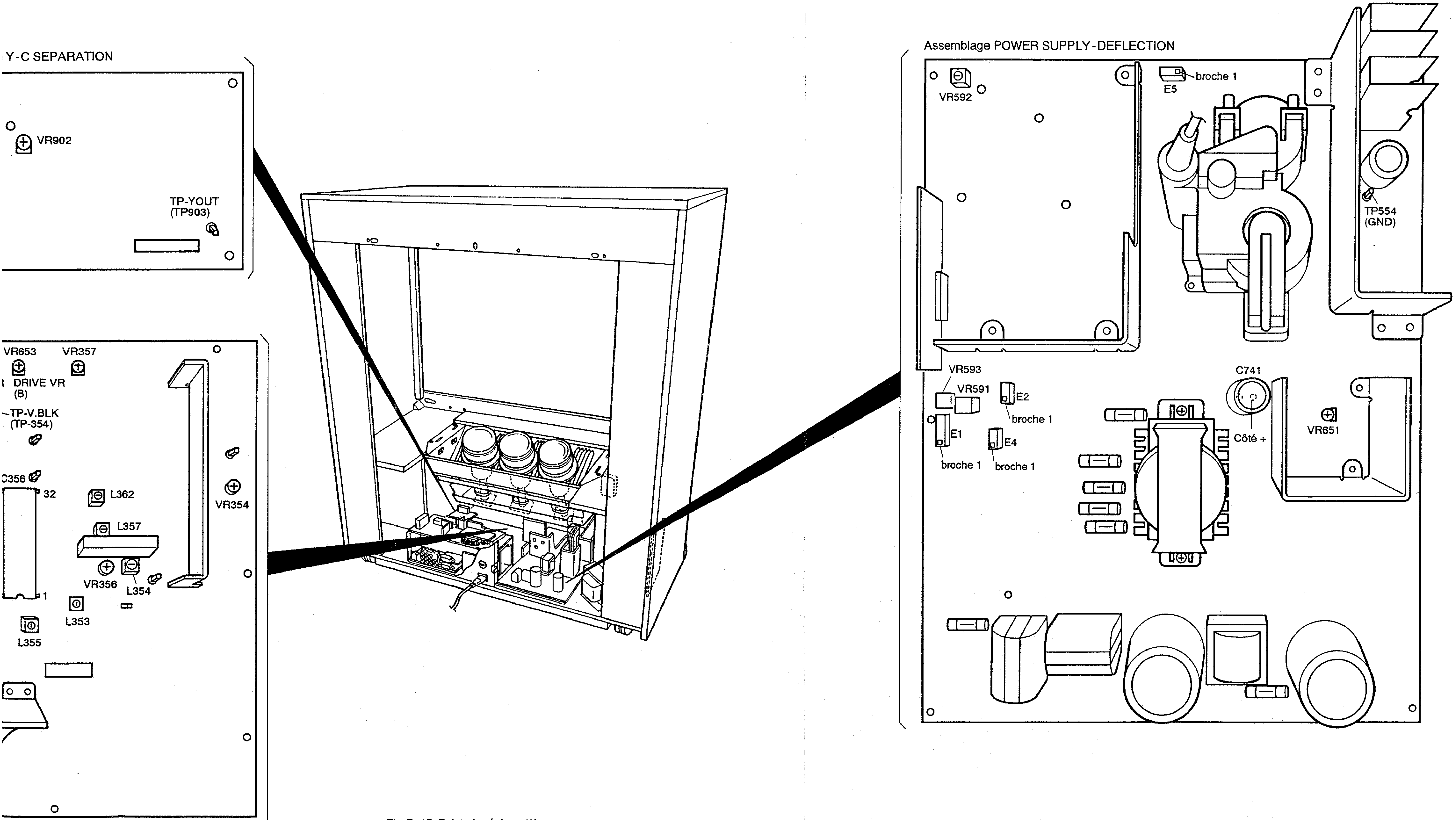

Y-C SEPARATION
VR902
TP-YOUT
(TP903)
VR653
VR357
DRIVE VR
(B)
TP-V.BLK
(TP-354)
C356
32
L362
L357
VR354
VR356
L354
1
L353
L355
Assemblage POWER SUPPLY-DEFLECTION
VR592
E5
broche 1
TP554
(GND)
VR593
VR591
E2
broche 1
E1
broche 1
E4
broche 1
C741
Côté +
VR651

Fig. 7-17 Point de réglage (1)

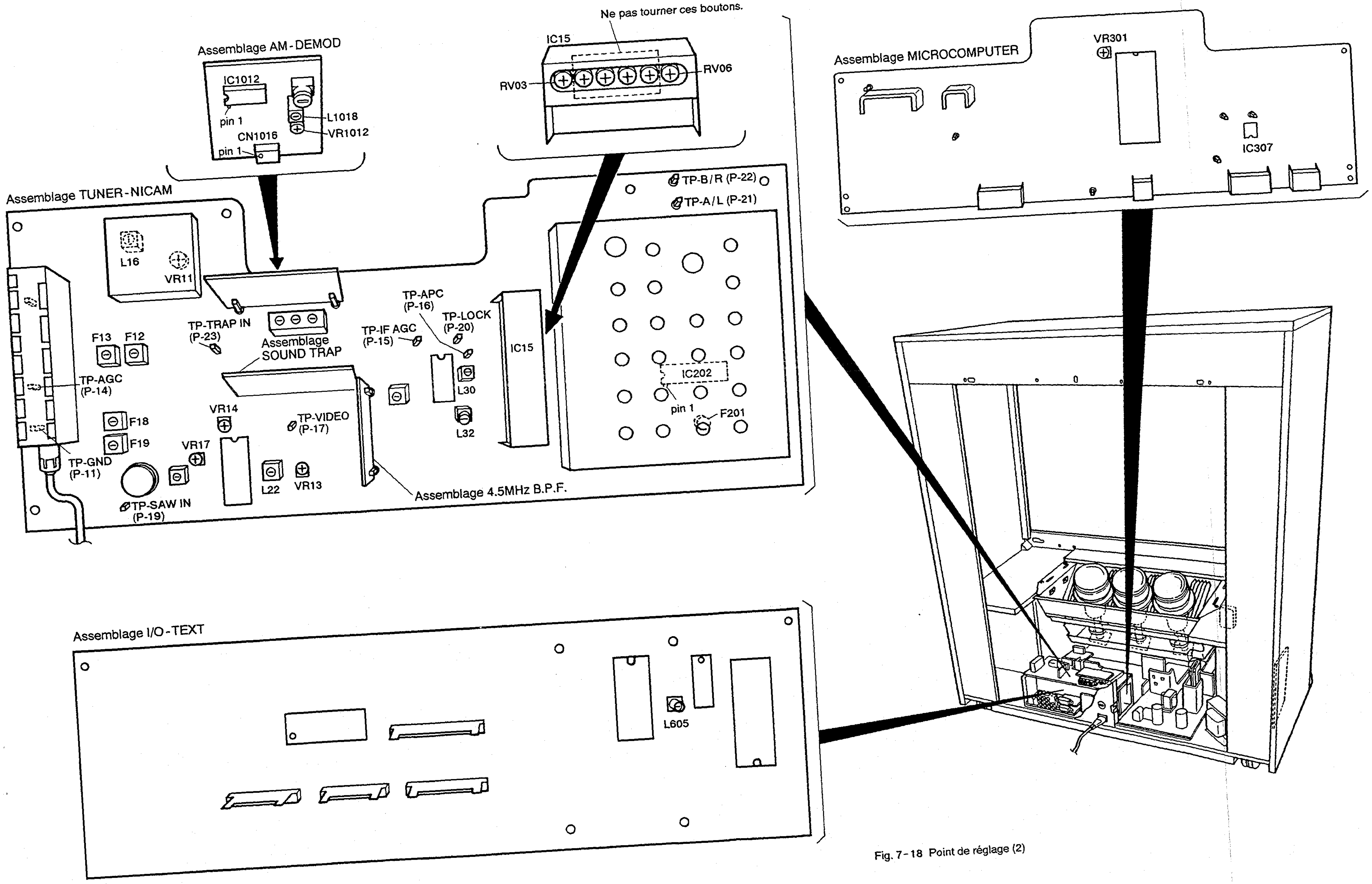

Ne pas tourner ces boutons.
Assemblage AM-DEMOD
IC1012
pin 1
L1018
VR1012
CN1016
pin 1
IC15
RV03
RV06
Assemblage MICROCOMPUTER
VR301
IC307
Assemblage TUNER-NICAM
TP-B/R (P-22)
TP-A/L (P-21)
L16
VR11
F13
F12
TP-TRAP IN (P-23)
Assemblage SOUND TRAP
TP-APC (P-16)
TP-LOCK (P-20)
TP-IF AGC (P-15)
IC15
IC202
pin 1
F201
TP-AGC (P-14)
L30
L32
F18
F19
VR14
TP-VIDEO (P-17)
VR17
TP-GND (P-11)
L22
VR13
TP-SAW IN (P-19)
Assemblage 4.5MHz B.P.F.
Assemblage I/O-TEXT
L605

Fig. 7-18 Point de réglage (2)

Bloc de balayag
Entretoi

urner ces boutons.

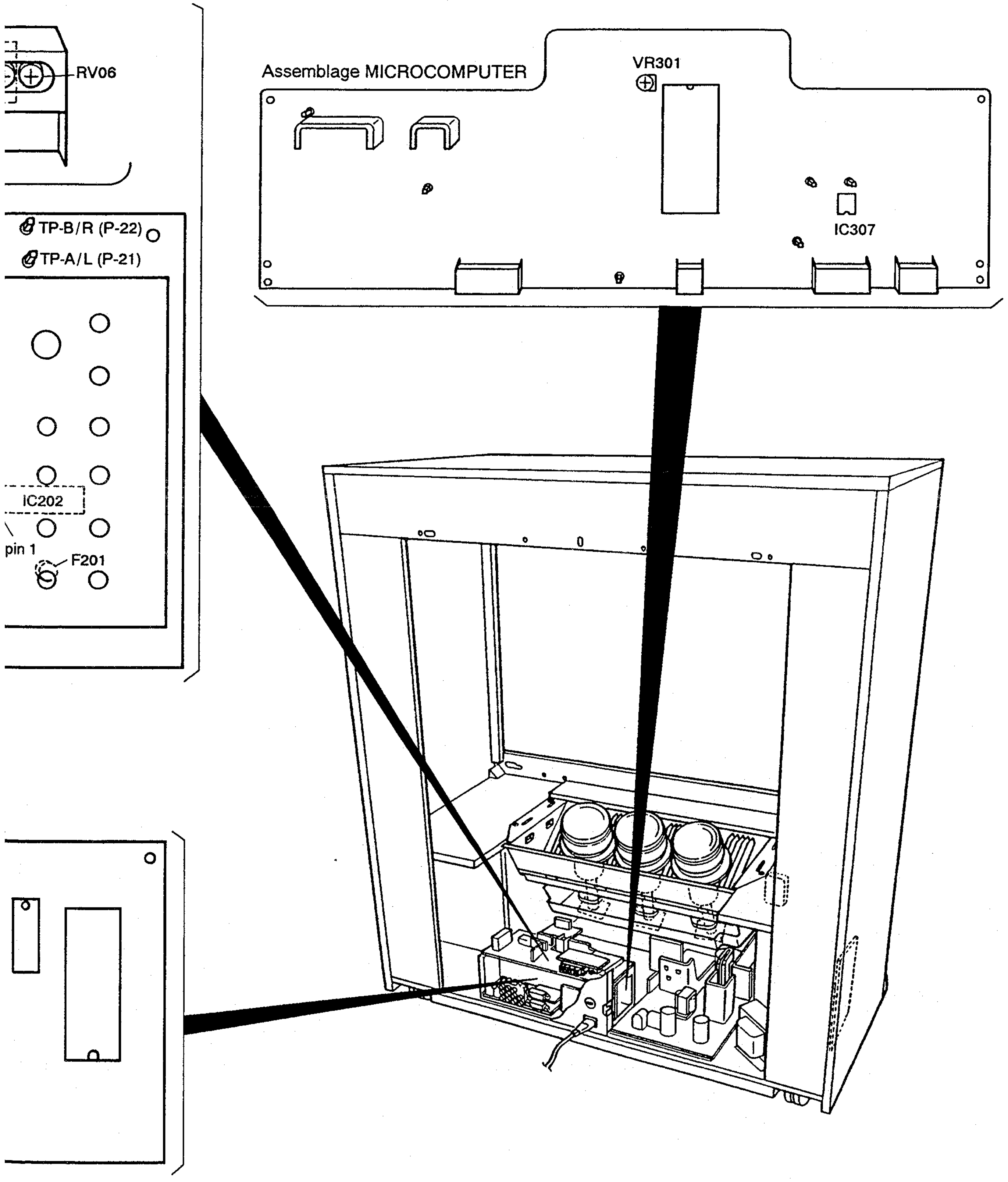
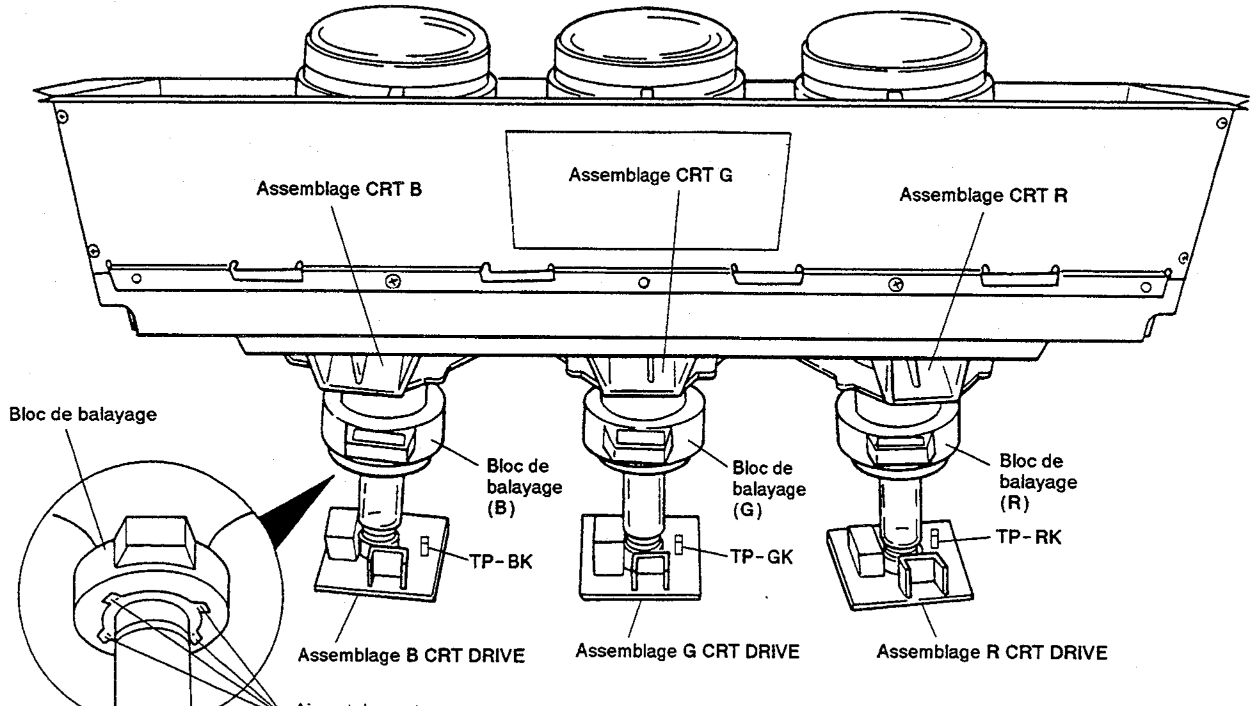

RV06
Assemblage MICROCOMPUTER
VR301
IC307
TP-B/R (P-22)
TP-A/L (P-21)
IC202
pin 1
F201

Fig. 7-18 Point de réglage (2)


Assemblage CRT B
Assemblage CRT G
Assemblage CRT R
Bloc de balayage
Bloc de balayage (B)
Bloc de balayage (G)
Bloc de balayage (R)
TP-BK
TP-GK
TP-RK
Assemblage B CRT DRIVE
Assemblage G CRT DRIVE
Assemblage R CRT DRIVE

Aimant de centrage
(Le tourner dans un sens ou l'autre jusqu'à ce que le signal en croix vire au blanc.)

Fig. 7-19 Point de réglage (3)

Remarque: Fixer une feuille de papier translucide, comme du papier-calque, tout en insérant des entretoises de 7 mm d'épaisseur pour l'aligner sur la position normale de la surface de l'écran. Utiliser des entretoises de la même épaisseur à gauche et à droite.

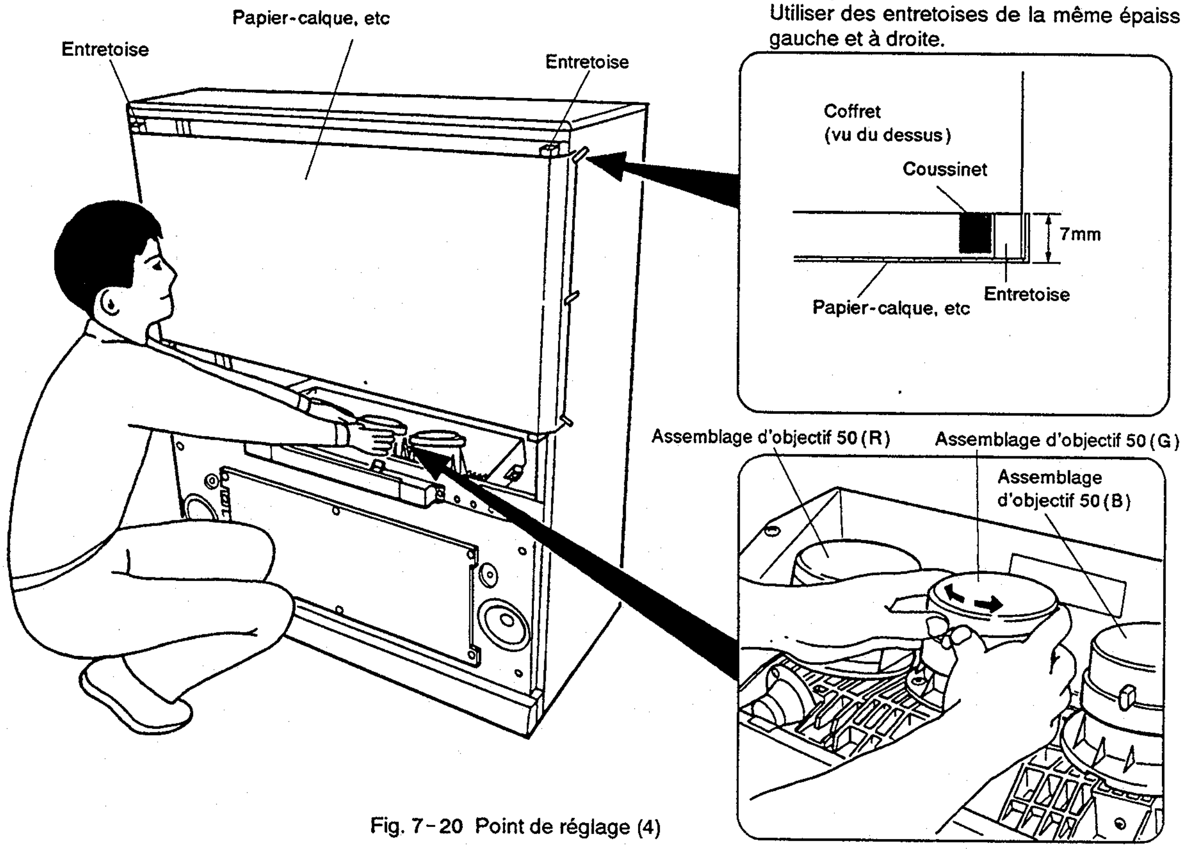
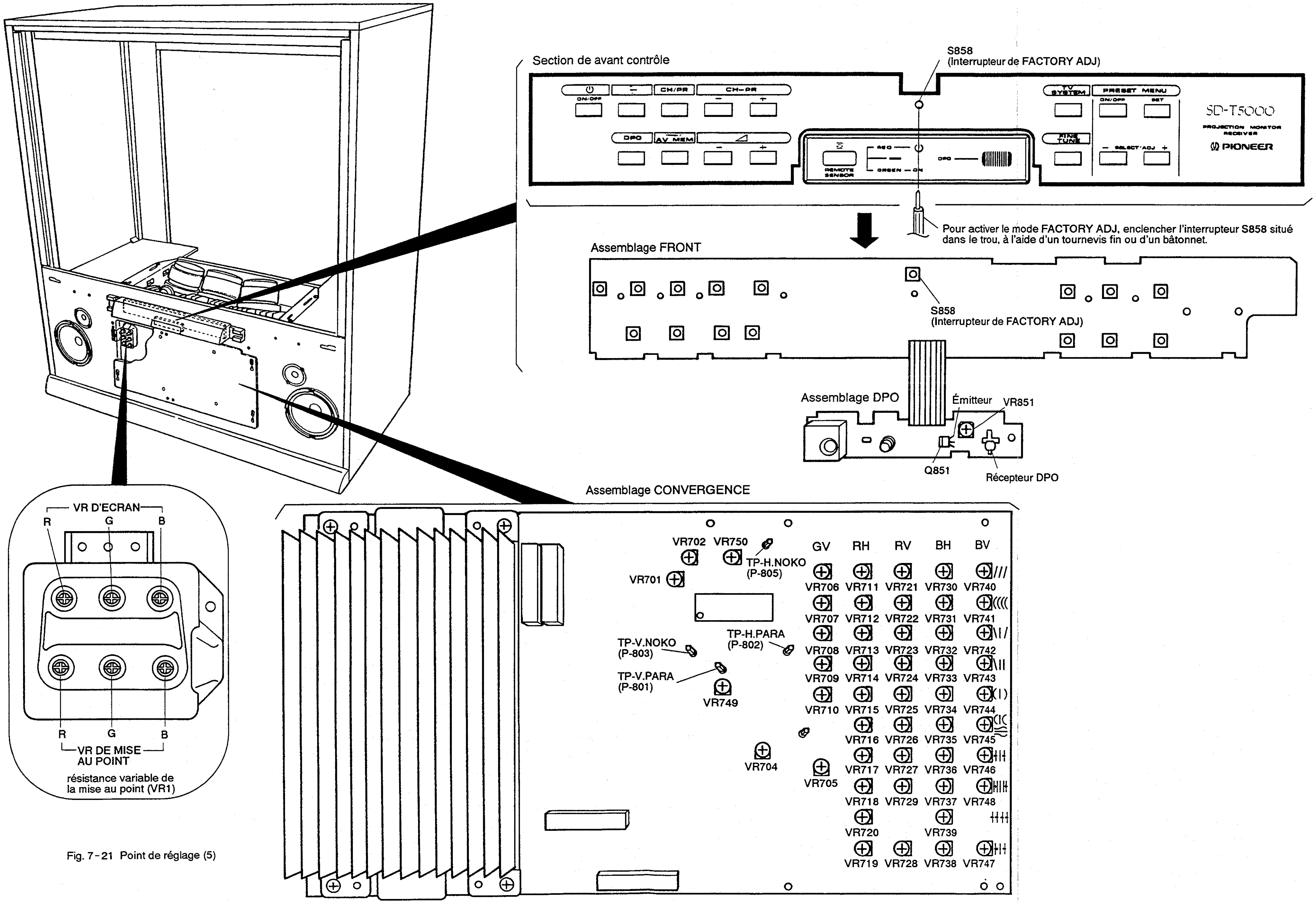

Papier-calque, etc
Entretoise
Entretoise
Coffret
(vu du dessus)
Coussinet
7mm
Papier-calque, etc
Entretoise
Assemblage d'objectif 50 (R)
Assemblage d'objectif 50 (G)
Assemblage d'objectif 50 (B)

Fig. 7-20 Point de réglage (4)


Section de avant contrôle
S858
(Interrupteur de FACTORY ADJ)
ON/OFF
CH/PR
CH–PR
DPO
AV MEM
TV SYSTEM
PRESET MENU
ON/OFF
SET
FINE TUNE
SELECT·ADJ
REMOTE SENSOR
RED — ON
GREEN — ON
DPO
SD-T5000
PROJECTION MONITOR RECEIVER
PIONEER
Assemblage FRONT
S858
(Interrupteur de FACTORY ADJ)
Assemblage DPO
Émitteur
VR851
Q851
Récepteur DPO
Assemblage CONVERGENCE
VR D'ECRAN
R
G
B
R
G
B
VR DE MISE AU POINT
VR702
VR750
TP-H.NOKO
(P-805)
VR701
TP-V.NOKO
(P-803)
TP-H.PARA
(P-802)
TP-V.PARA
(P-801)
VR749
VR704
VR705
GV
RH
RV
BH
BV
VR706
VR711
VR721
VR730
VR740
VR707
VR712
VR722
VR731
VR741
VR708
VR713
VR723
VR732
VR742
VR709
VR714
VR724
VR733
VR743
VR710
VR715
VR725
VR734
VR744
VR716
VR726
VR735
VR745
VR717
VR727
VR736
VR746
VR718
VR729
VR737
VR748
VR720
VR739
VR719
VR728
VR738
VR747

Pour activer le mode FACTORY ADJ, enclencher l'interrupteur S858 situé dans le trou, à l'aide d'un tournevis fin ou d'un bâtonnet.

résistance variable de la mise au point (VR1)

Fig. 7-21 Point de réglage (5)

# 7. AJUSTES

- El SD - T5000 se conforma a los sistemas de TV estandard de M, B/G, I, D/K, L y L', y los sistemas de color NTSC, NTSC4,43, PAL y SECAM.
  Las diferencias de ajustes entre los sistemas se clarificarán en los textos siguientes.
  Cuando la unidad se usa con un otro sistema que anteriormente ajustado, la imagen y el sonido serán anormales.
  En este caso, reajuste la unidad al sistema corriente.
- Se recomienda fuertemente ajustar la unidad con la pantalla que mira hacia este u oeste.
- Artículos de ajuste se escriben como sigue.

7.1 MODO DE FACTORY ADJ  
7.2 CUANDO SE REMEDIA EL MONTAJE DE POWER SUPPLY - DEFLECTION  
7.3 CUANDO SE REEMPLAZA EL MONTAJE DE POWER SUPPLY - DEFLECTION  
7.4 CUANDO SE REMEDIA EL MONTAJE DE Y - C SEPARATION  
7.5 CUANDO SE REEMPLAZA EL MONTAJE DE Y - C SEPARATION  
7.6 CUANDO SE REMEDIA EL MONTAJE DE VIDEO - AUDIO  
7.7 CUANDO SE REEMPLAZA EL MONTAJE DE VIDEO - AUDIO  
7.8 CUANDO SE REMEDIA EL MONTAJE DE TUNER - NICAM  
7.9 CUANDO SE REEMPLAZA EL MONTAJE DE TUNER - NICAM  
7.10 CUANDO SE REMEDIA EL MONTAJE DE AM - DEMOD  
7.11 CUANDO SE REEMPLAZA EL MONTAJE DE AM - DEMOD  
7.12 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE CONVERGENCE  
7.13 CUANDO SE REMEDIA EL MONTAJE DE MICRO-COMPUTER  
7.14 CUANDO SE REEMPLAZA EL MONTAJE DE MICROCOMPUTER  
7.15 CUANDO SE REMEDIA EL MONTAJE DE I/O - TEXT  
7.16 CUANDO SE REEMPLAZA EL MONTAJE DE I/O - TEXT  
7.17 CUANDO SE REMEDIA EL MONTAJE DE DPO  
7.18 CUANDO SE REEMPLAZA EL MONTAJE DE DPO  
7.19 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE DYNAMIC FOCUS  
7.20 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE HIGH VOLTAGE CONTROL  
7.21 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE R, G O B CRT DRIVE  
7.22 CUANDO SE REEMPLAZA EL MONTAJE DE CRT DE R, G O B  
7.23 CUANDO SE REEMPLAZA EL MONTAJE DE LENTE  
7.24 CUANDO SE REMEDIAN O SE REEMPLAZAN OTROS MONTAJES  
7.25 AJUSTE DE BASE DE DPO  
7.26 AJUSTE DE SENSITIVIDAD DE DPO  
7.27 METODO DE MEDIDA DE TENSION DE ANODO

- Estos procedimientos de ajuste se escriben separadamente con respecto a los ajustes de reemplazo y con respecto a los ajustes de remedios.
- Al reemplazar los montajes, siempre use las piezas recomendadas.
- Los símbolos en el paréntesis que siguen a las posiciones de ajuste indican los montajes que deben ser ajustados.

D : Montaje de POWER SUPPLY - DEFLECTION  
VR1 : Resistor variable de foco  
V : Montaje de VIDEO - AUDIO  
A : Montaje de AM - DEMOD  
C : Montaje de CONVERGENCE  
M : Montaje de MICROCOMPUTER  
T : Montaje de TUNER - NICAM  
IC : IC15 en el montaje de TUENR - NICAM  
Y : Montaje de Y - C SEPARATION  
I : Montaje de I/O - TEXT

- Los puntos de ajuste y los terminales de TP sobre cada montaje se escriben en las figuras 7 - 17 a 7 - 21.

Figura 7 - 17:
  El montaje de VIDEO - AUDIO, el montaje de Y - C SEPARATION y el montaje de POWER SUPPLY - DEFLECTION.

Figura 7 - 18:
  El montaje de MICROCOMPUTER, el montaje de I/O - TEXT, el montaje de TUNER - NICAM y el montaje de AM - DEMOD.

Figura 7 - 19:
  Los montajes de R, G, B CRT DRIVE y el yugo de desviación.

Figura 7 - 20:
  Los montajes de lente (Rojo, Verde, Azul).

Figura 7 - 21:
  El montaje de CONVERGENCE, el panel frontal, el montaje de FRONT y el resistor variable de foco.

- Ponga los terminales de entrada en el panel posterior como sigue si no hay otra indicación.
  Señal de VIDEO : terminal de AV4 VIDEO
  Señal de AUDIO : terminal de AV4 AUDIO
- Ponga la calidad de pantalla al estandard por una unidad de control remoto si no hay otra indicación.

## 7.1 MODE DE FACTORY ADJ

### • Sobre el modo de FACTORY ADJ (ajuste en la f'abrica)

El modo de FACTORY ADJ se activa y desactiva por presionando el interruptor S858 a través del agujero pequeño central en la sección del control frontal, con una varilla o equivalente. (Vea la figura 7 - 21.)

Este modo de FACTORY ADJ consiste del modo de ADJUSTMENT RANGE y el modo de ADJUSTMENT OFFSET. El modo de ADJUSTMENT RANGE se usa para comprobar rápidamente la variación de los controles de pantalla y sonido (COLOR, TINT, CONTR, BRITE, SHARP, BASS, TREBL, BALNC y CONVR) y el modo de ADJUSTMENT OFFSET se usa para poner la calidad de pantalla (al estandard de PIONEER) cuando un cliente se ha definido el ajuste al estandard usando el control remoto.

Cuando el modo de FACTORY ADJ se activa y el funcionamiento de CNT - a - MIN - a - CNT o CNT-a - MAX - a - CNT se hace en el modo de ADJUSTMENT RANGE, todos los valores de memoria de AV puestos por el cliente van a cancelarse a "0" y la posición de convergencia va a ser al centro de la gama variable.

Después de desactivar el modo de FACTORY ADJ, ponga los valores de memoria de AV y la posición de convergencia otra vez como se requieren.

### • Como se usa el modo de FACTORY ADJ

① Mode de ADJUSTMENT RANGE

Cuando se presiona el interruptor de S858 en la sección del control frontal (vea la figura 7 - 21), para activar el modo de FACTORY ADJ, la pantalla indica el modo de ADJUSTMENT RANGE como se ve en la figura 7 - 1 ①.

En este modo, los puntos del centro (CNT), mínimo (MIN) y máximo (MAX) en las gamas de control variable de la calidad de pantalla, de la calidad de sonido y de la posición de convergencia se pueden comprobar fácilmente (no es necesario de cambiar los ajustes corrientes con las teclas +⊿ - .)

Para comprobar, use las teclas numerales sobre el control remoto, que corresponden a los funcionamientos de la pantalla y el control de sonido como siguen.

$\boxed{1}$ :COLOR  
$\boxed{2}$ :TINT  
$\boxed{3}$ :CONTR  
$\boxed{4}$ :BRITE  
$\boxed{5}$ :SHARP  
$\boxed{7}$ :BASS  
$\boxed{8}$ :TREBL  
$\boxed{9}$ :BALNC  
$\boxed{0}$ :CONVR (Convergencia)

Por ejemplo, al comprobar la variación de TINT, presione la tecla $\boxed{2}$ del control remoto. Cada vez que presiona la tecla $\boxed{2}$ los puntos de CNT, MIN y MAX se muestran a continuación.

Maneje las otras teclas de la misma manera que los artículos respectivos. (Al comprobar los controles de pantalla y sonido, use la señal cuyas variaciones se reconocen fácilmente.)

Notas:

- $\boxed{9}$ : Se usa cuando se compruebe BALNC.
  CNT : Para emitir la señal de ambos canales.
  MIN : Para emitir la señal del canal derecho solamente.
  MAX : Para emitir la señal del canal izquierdo solamente.
- $\boxed{0}$ :Se usa cuando se compruebe CONVR.
  CNT : Para la posición central.
  MIN : Para mudar hacia la derecha superior.
  MAX : Para mudar hacia la izquierda inferior.

② Modo de ADJUSTMENT OFFSET (modo de ajuste de estandard PIONEER)

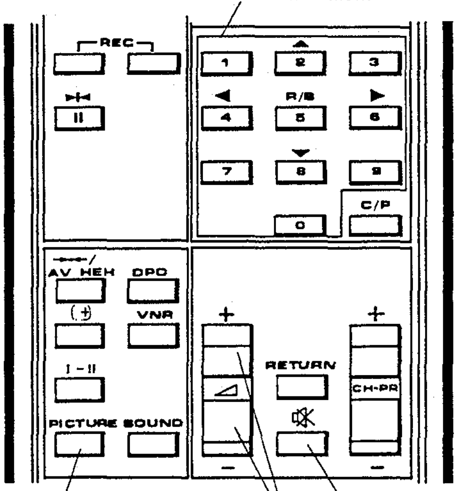
Al presionar la tecla MUTE del control remoto, el modo cambia desde ADJUSTMENT RANGE al modo de ADJUSTMENT OFFSET como se ve en la figura 7 - 1 ②.

El ajuste de imagen (COLOR, TINT, CONTR, BRITE, SHARP) en este modo será seleccionado como el modo de estandard (estandard de PIONEER) usando el control remoto.

Para ajustar, seleccione el artículo con una tecla designada o las teclas numéricas ( $\boxed{1}$ a $\boxed{5}$ y después, ajuste el artículo seleccionado con las teclas + ⊿ - de acuerdo con el procedimiento de ajuste especificado.

El valor de referencia se indica en la esquina derecha inferior de la pantalla.

Teclas numéricas


REC
1
2
3
4
5
6
7
8
9
0
P/■
C/P
AV HEH
DPD
VNR
I - II
PICTURE
SOUND
RETURN
CH-PR
+
+
−
−

Tecla PICTURE

Tecla MUTE

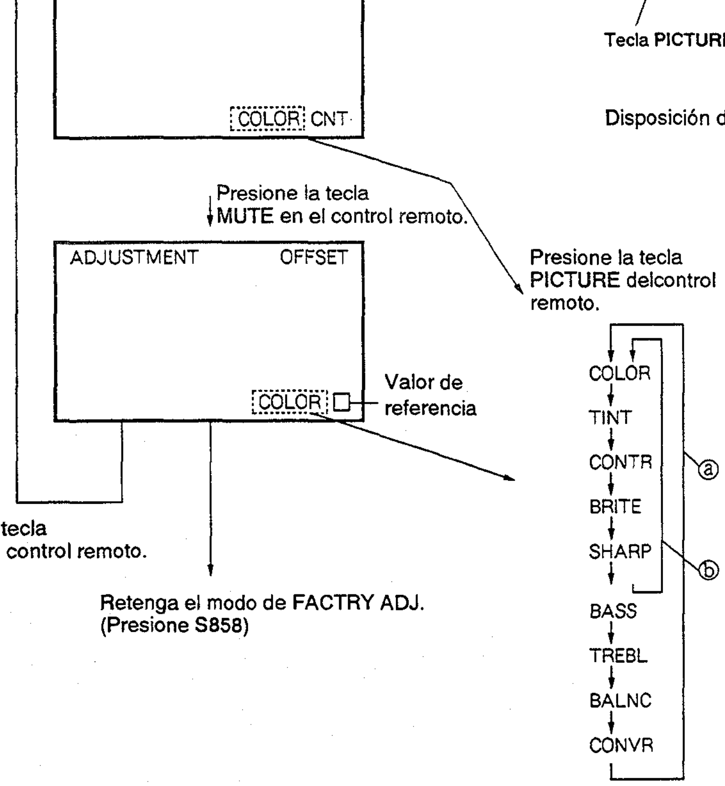
Tecla ◿ (VOLUME)

Fig. 7 - 2
Disposición de las teclas del control remoto

Entre el modo de FACTORY ADJ.
(Presione S858.)

① Mode de ADJUSTMENT RANGE
(carácter rojo)

② Mode de ADJUSTMENT OFFSET
(carácter azul)


ADJUSTMENT RANGE
COLOR CNT
ADJUSTMENT OFFSET
COLOR □
COLOR
TINT
CONTR
BRITE
SHARP
BASS
TREBL
BALNC
CONVR
ⓐ
ⓑ

Presione la tecla MUTE en el control remoto.

Valor de referencia

Presione la tecla PICTURE delcontrol remoto.

Presione la tecla MUTE en el control remoto.

Retenga el modo de FACTRY ADJ.
(Presione S858)

Presione la tecla numérica del control remoto.

O
- 1 : COLOR
- 2 : TINT
- 3 : CONTR
- 4 : BRITE
- 5 : SHARP

*1
- 7 : BASS
- 8 : TREBL
- 9 : BALNC
- 0 : CONVR (Convergencia)

Nota * 1:
**BASS, TREBL, BALNC y CONVR se reproducen en el modo de ADJUSTMENT RANGE.**

ⓐ: Modo de ADJUSTMENT RANGE
ⓑ: Modo de ADJUSTMENT OFFSET

Fig.7 - 1 Mainfestación de pantalla en el modo de FACTRY ADJ

## 7.2 CUANDO SE REMEDIA EL MONTAJE DE POWER SUPPLY-DEFLECTION

Nota: VR591 y VR593 se protegen por las cubiertas de defensa (ANH1166) para que no se ajusten. No intente a hacer girar los volumenes por quitando la cubierta. (De otra manera, el circuito protectivo de sentividad contra el rayo X y la tensión anodo será afectado.)

- Los puntos de prueba de ajuste (TP) están colocados en el montaje de POWER SUPPLY - DEFLECTION.

### 7.2.1 Sección de Alimentación

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Ajuste de alimentación de 135V | Señal de monoscopio | VR651(D) | Ajuste la tensión de ambos lados de C741 (montaje de POWER SUPPLY-DEFLECTION) a 135V ± 1V. |

- **Comprobación de la tensión de cada salida**

Después de hacer el ajuste de +135V, confirme cada tensión como sigue.

| Punto de medida | Tensión | Punto de medida | Tensión |
|---|---|---|---|
| E1 +13.5V (alfiler 9 ó 10) para GND (alfier 11) | +13.5V ± 0.5V | E2 +35V (alfiler 3 ó 4) para GND (alfiler 1 ó 2) | +32V ± 5V (menos de +40V) |
| E1 +8V (alfiler 7 ó 8) para GND (alfiler 11) | $+8V^{+2V}_{-1V}$ | | |
| E1 +30V (alfiler 13) para GND (alfiler 11) | +30V ± 5V | E4 +25V (alfiler 5) para V.GND (alfiler 4 ó 3) | +25V ± 3V |
| E1 +39V (alfiler 14) para GND (alfiler 11) | +39V ± 3V | E4 -24V (alfiler 1) paraV.GND (alfiler 4 ó 3) | -24V ± 3V |
| E5 H.T.+ (alfiler 4) para H.T. − (alfiler 5) | +6.25V ± 0.25V | E5 +220V (alfiler 1) para TP554 (GND) | +220V ± 20V |

### 7.2.2 Sección de desviación

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Ajuste de foco | Señal de trampa de cruz | VR de foco (VR1) | Compruebe el foco de cada montaje de CRT. (El foco es más fácil de juzgar si se cambian el rojo y el azul por girando los controles de convergencia del control remoto como se ve en la figura 7-13. Reajuste estos controles a sus posiciones originales después del ajuste de foco.) |
| 2 | Ajuste del tamaño horizontal | Señal de monoscopio o radiodifusión ordinaria | VR592 (D) | Ajuste los armazones derecho e izquierdo a los valores siguientes. Cuando ajusta con la radiodifusión ordinaria, ajuste para que la pantalla no esté negra.<br>• Para NTSC y NTSC 4,43: Derecho = 92,5 ± 2%, Izquierdo = 92 ± 2%<br>• Para PAL y SECAM: Derecho = 94,5 ± 2%, Izquierdo = 93,5 ± 2%<br>Después de este ajuste, compruebe la convergencia, V.SIZE y los ajustes de H.BLK. |
| 3 | Ajuste del equilibrio de blanco | Radiodifisión ordinaria | Pantalla (VR1) (R), (B) | Ajuste el blanco como sigue, si no se puede obtener el ajuste apropiado. Ponga COLOR del control remoto al mínimo y ajuste VR de la pantalla para obtener la mejor imagen. |

## 7.3 CUANDO SE REEMPLAZA EL MONTAJE DE POWER SUPPLY-DEFLECTION

Nota: VR591 y VR593 en el montaje de POWER SUPPLY-DEFLECTON que se dispone como una pieza de repuesto se protegen por la cubierta de defensa (ANH1166).
Nunca quite la cubierta (ANH 1166).

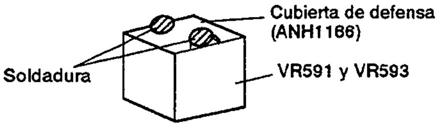


Fig. 7-3 Cubierta de defensa

### 7.3.1 Sección de alimentación

- Se requiereno ajuste.

### 7.3.2 Sección de desviación

- Ajuste el foco, el tamaño horizontal y el equilibrio de blanco como se escriben en la sección 7.2.2.

## 7.4 CUANDO SE REMEDIA EL MONTAJE DE Y-C SEPARATION

- Ajuste solamente para el sistema NTSC.

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Ajuste del filtro de peine | Barra de color | VR902 (Y)<br>L916 (Y) | Ajuste para que los elementos de la señal de color a TP-YOUT (TP-903) en el montaje de Y-C SEPARATION sean más reducidos que posible. |
| 2 | Compruebe para el estandard de PIONEER. | Si no se obtiene la mejor pantalla, ajuste como se escribe en la sección 7.6. | | |

## 7.5 CUANDO SE REEMPLAZA EL MONTAJE DE Y-C SEPARATION

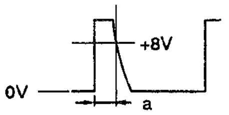
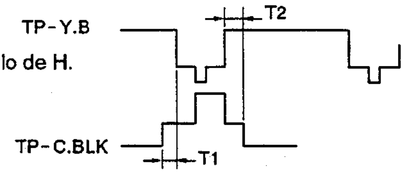
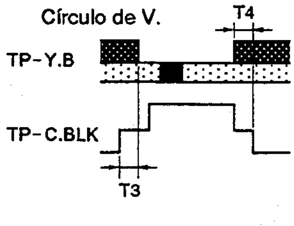
- Se require no ajuste.

## 7.6 CUANDO SE REMEDIA EL MONTAJE DE VIDEO-AUDIO

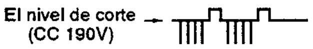
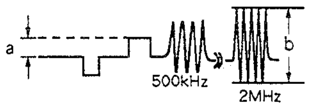
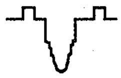
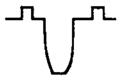
- Los puntos de ajuste de prueba (TP) están colocados en el montaje de VIDEO-AUDIO si no hay otra indicacción.
- Antes de ajustar, compruebe el ajuste del filtro de peine como se escribe en la sección 7.4 (solamente para el sistema NTSC).

### 7.6.1. Procedimiento de ajuste

- Las etapas 5 y 6 se escriben separadamente en otras tablas. Vea las secciones 7.6.2. y 7.6.3.

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Ajuste de V. SIZE<br>*1 | Señal de monoscopio | VR357 (V) | Ajuste los armazones superior e inferior a los valores siguientes. Cuando ajusta con la radiodifusión ordinaria, ajuste para que la pantalla no esté negra.<br>• Para NTSC y NTSC 4,43: Superior :91 ± 3%, Inferior : 95 ± 3%<br>• Para PAL y SECAM: Superior : 92 ± 3%, Inferior : 94 ± 3%<br>Después de este ajuste, compruebe la convergencia y los ajustes de H. SIZE. |
| 2 | Ajuste de anchura de V. BLK (1)<br>*1 | Señal de blanco de 100% | VR354 (V) | Ajuste el nivel de TP-V.BLK (TP-354) la anchura de pulso a "a" para que sea el valor especifi cado abajo en el punto de +8V.<br>**Forma de onda de TP-354**<br> <br>•NTSC y NTSC 4.43<br>a=1.2msec<br>•PAL<br>a=1.2msec ± 60 μ sec<br>•SECAM<br>a=1.2msec |
| 3 | Ajuste de anchura de H. BLK | Señal de blanco de 100% | VR352 (V) | Mientras observando simultáneamente TP-Y. B (TP-369) y TP-C. BLK (TP-366), ajuste T1 en el círculo H al valor especificado abajo.<br>Después de ajustar T1, compruebe que T2 es el valor especificado abajo.<br>• Para NTSC y NTSC 4,43<br>T1=1.2 μ sec ± 200nsec<br>T2=2.4 μ sec ± 400nsec<br>• Para PAL y SECAM<br>T1=1.0 μ sec ± 400nsec<br>T2=1.8 μ sec ± 400nsec<br> |
| 4 | Ajuste de anchura de V. BLK (2)<br>*1 | Señal de blanco de 100% | VR351 (V)<br>VR353 (V) | Mientras observando el círculo de V. en la etapa 3, ajuste T3 al valor especificado abajo. Después de ajustar T3, compruebe que T4 es el valor especificado abajo.<br>① Para el sistema NTSC o NTSC 4,43<br>Ajuste T3 y T4 a los valores siguientes con VR351.<br>T3 = 300 μ sec ± 50 μ sec<br>T4 = 390 μ sec ± 100 μ sec<br>Sin una señal del sistema PAL o SECAM se recibe después de este ajuste, el valor ajustado se desvia. Usando PAL o SECAM SG, ajuste VR353 para obtener el valor ② como se ve abajo.<br> <br>② Para el sistema PAL o SECAM<br>Ajuste T3 y T4 a los valores siguientes con VR353.<br>T3 = 350 μ sec ± 50 μ sec<br>T4 = 500 μ sec ± 100 μ sec |

*1: Cuando se realice el ajuste de V.SIZE, asegúrese de comprobar los ajustes de V. BLK (1) y (2).

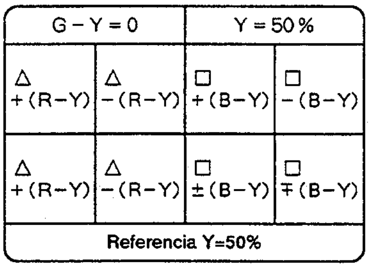
| Número de etapa | Artículo de ajuste | | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|---|
| 5 | Ajuste de sistema de PAL | | Ajuste la línea de retraso de cristal al demodulador de PAL como se escribe en la sección 7.6.2. (Ajuste solamente para el sistema PAL.) | | |
| 6 | Ajuste de sistema de SECAM | | Ajuste el rollo de SECAM IDENT, el rollo detectivo y BELL FILTER como se escriben en la sección 7.6.3. (Ajuste solamente para el sistema SECAM.) | | |
| 7 | Ajuste de equilibrio de blanco | | Señal de barra de color sin la señal de color | Pantalla VR (R), (B) (VR1) | Ajuste las pantallas VR (R) y (B) hasta que el color gris puede ser visto en el área obscura. (No mueva el VR verde en esta etapa.) |
| | | | | VR651(R) } Paseo de<br>VR653(B) } VR(VR1) | Usando el paseo VR, ajuste el color en el área obscuro a blanco. |
| 8 | Ajuste al estandard de PIONEER | Ponga al estandard el PIONEER del modo de FACTORY ADJ. (Cuando se completa el ajuste, vuelve a la condición normal.) | | | |
| 9 | | Ajuste de brillo | Señal de trampa de cruz | COLOR (*2) | Disminuya el color por el control remoto. |
| | | | | BRITE (*2) | Ajuste el nivel de corte en TP-RK del montaje R.CRT DRIVE a CC190V. (Después del ajuste, confirme el equilibrio de blanco.)<br> <br>(Después de este ajuste, ajuste de color como se escribe en la etapa 4.) |
| 10 | | Ajuste de agudeza | Explosión multipulada | SHARP (*2) | En TP-G (TP-373), ajuste la proporción de "b" (el valor de pico-a-pico a 2MHz) a "a" (nivel desde negro a blanco) como sigue.<br>• Con NTSC y NTSC 4.43 a : b = 2 : 2,7 (+ 2,6dB)<br>• Con PAL a : b = 2 : 2,6 (+ 2,3dB)<br>• Con SECAM a : b = 2 : 2,7 (+ 2,6dB)<br> |
| 11 | | Ajuste de color | Barra de color | COLOR (*2) | Ajuste la pantalla a la condición óptima. |
| 12 | | Ajuste de tinte (*3) | | TINT (*2) | Ajuste la pantalla a la condición óptima. |
| 13 | | Ajuste de contraste | Señal libre | CONTR (*2) | Ajuste la pantalla a la condición óptima. |
| 14 | | | | — | En TP-BK del montaje de B. CRT DRIVE, confirme que la señal se forma como sigue abajo.<br>Forma de onda dinstinta<br>Forma de onda no distinta |
| 15 | Ajuste de azul | | Señal de cruz | — | Ajuste la salida de SG de la señal de cruz de entrada al nivel máximo. |
| | | | | | Aumente le contraste por el control remoto. |
| | | | | VR652 (V) | Haga girar VR652 completamente en el sentido de las agujas del reloj. (Se resulta en azul.) |
| | | | | | Haga girar VR hasta que no hay azul en la línea de cruz vertical en la pantalla. |

*2: Ajuste con el control remoto.
*3: Ajuste solamente para NTSC y NTSC 4,43.

### 7.6.2 Ajuste del sistema PAL

- Este ajuste se separa desde la tabla en 7.6.1 para el sistema PAL.
- El ajuste se requiere el dibujo DEM.
- Si no se ejecute el ajuste correctamente, los colores cambian en la cada línea de examinación, y esto se puede observar solamente por usando el dibujo DEM.

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 5-1 | Ajuste de la línea de retraso de cristal para el demodulador de PAL. | Dibujo de PAL DEM | —— | Ponga el osciloscopio como sigue: H= 2mS/div: V=100mV/div. Observe las formas de onda al alfiler 60 (R-Y IN) y el alfiler 62 (B-Y IN) de IC356. |
| 5-2 | | | L354 (V) | Ajuste para que la forma de onda del área 1 de medida en la figura 7-5 (figura 7-6 a) aparezca como se ve en la figura 7-6 b. |
| 5-3 | | | VR356 (V) | Ajuste para que la forma de onda del área 2 de medida en la figura 7-5 aparece como se ve en la figura 7-6 c. |
| 5-4 | Repita las etapas 5-2 y 5-3 hasta que la pantalla más clara se puede obtener. (Ajuste para que el área 1 de medida está puesto debajo de 50mV p-p, y el área 2 de medida está puesto debajo de 180mV p-p.) | | | |



| G-Y=0 | | Y=50% | |
|---|---|---|---|
| △ +(R-Y) | △ -(R-Y) | □ +(B-Y) | □ -(B-Y) |
| △ +(R-Y) | △ -(R-Y) | □ ±(B-Y) | □ ∓(B-Y) |
| Referencia Y=50% | | | |

Nota;
△ ;(B - Y)=0
□ ;(R - Y)=0

Fig. 7-4 El dibujo DEM

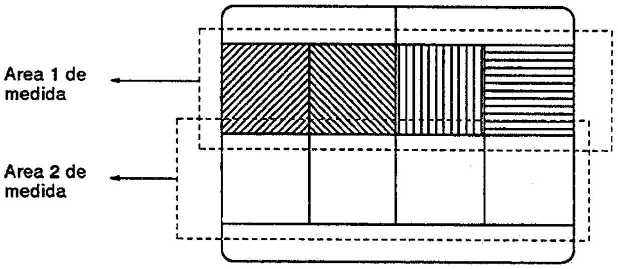
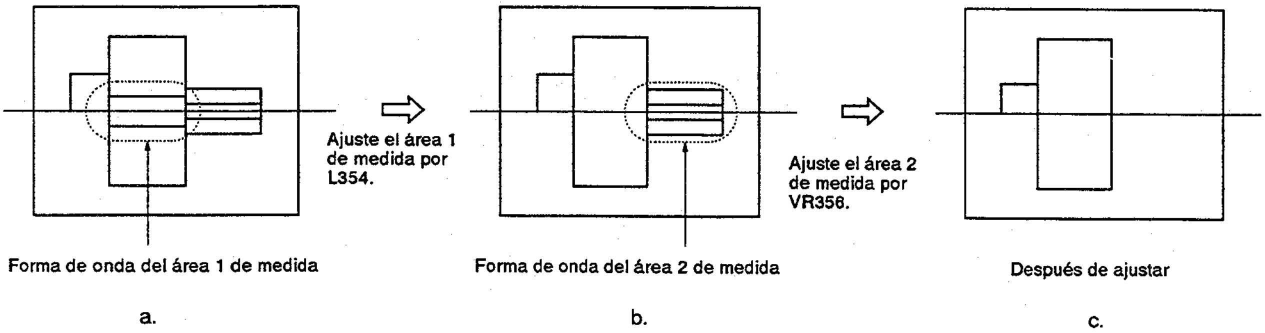


Fig. 7-5 Area de medida


Ajuste el área 1 de medida por L354.
Ajuste el área 2 de medida por VR356.

Forma de onda del área 1 de medida

a.

Forma de onda del área 2 de medida

b.

Después de ajustar

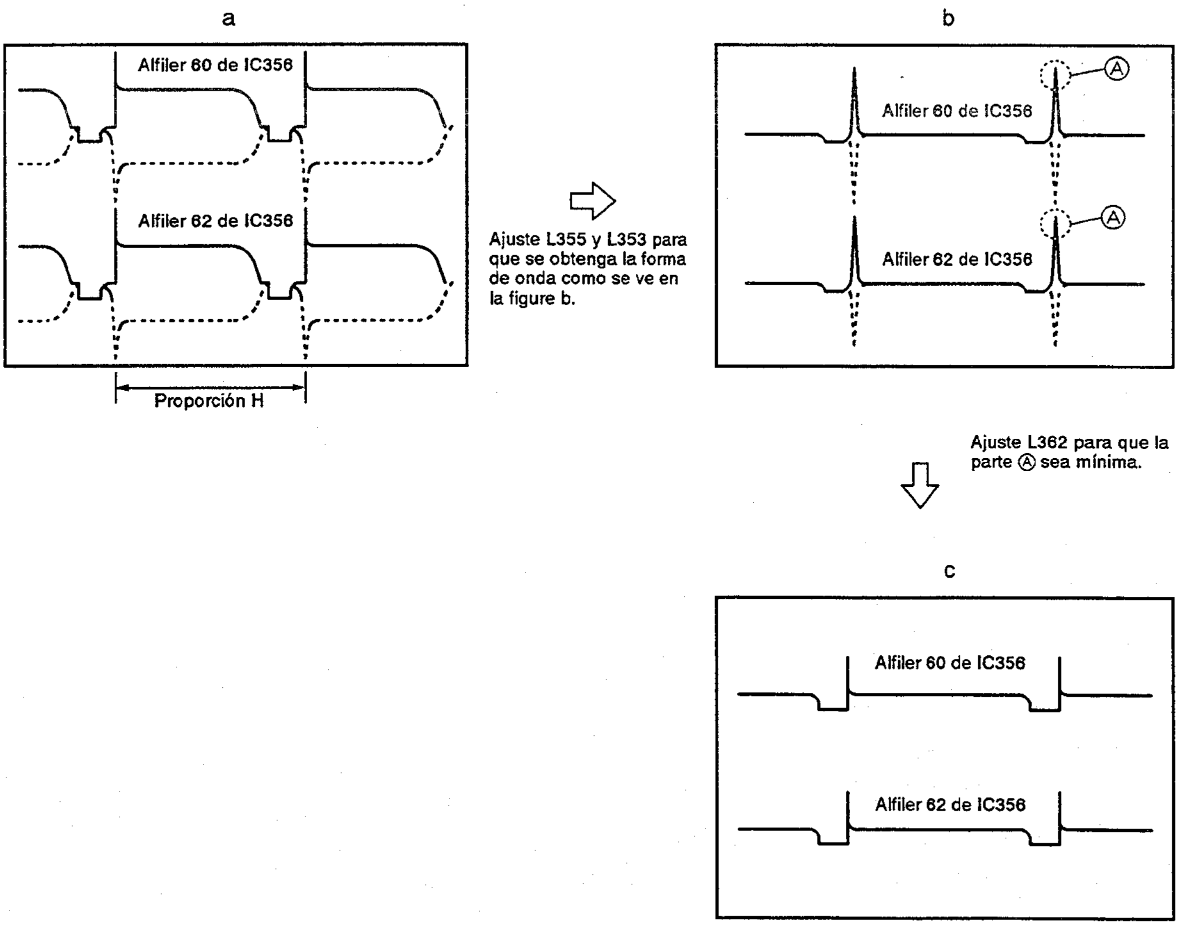
c.

Fig. 7-6 Pantalla del osciloslopio

### 7.6.3 Ajuste del Sistema SECAM

- Este ajuste se separe para el sistema SECAM.

| Número de etapa | Aetículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 6-1 | Ajuste de identidad de SECAM | Barra de color SECAM | L357 (V) | Ajuste para que la tensión de CC al alfiler 23 de IC356 sea máxima. |
| 6-2 | Ajuste del rollo de detección y del filtro de campana. | Señal de negro (incluyendo el portador de color SECAM) | L355 (V):<br>Alfiler 60 (R-Y IN)<br>L353 (V):<br>Alfiler 62 (B-Y IN) | Ajuste para que la forma de onda se aparezca como se ve en la figura 7-7 b al alfiler 60 (R-Y IN) y alfiler 62 (B-Y IN) de IC356. |
| 6-3 | | | L362 (V) | Ajuste para que la forma de onda se aparezca como se ve en la figura 7-7 c al alfiler 60 (R-Y IN) y alfiler 62 (B-Y IN) de IC356. |
| 6-4 | Repita las etapas 6-2 y 6-3 hasta que se obtenga la mejor pantalla. Compruebe que las barras de color se muestran correctamente en la pantalla después del ajuste. | | | |


a
Alfiler 60 de IC356
Alfiler 62 de IC356
Proporción H
b
Alfiler 60 de IC356
Alfiler 62 de IC356
Ⓐ
Ⓐ
c
Alfiler 60 de IC356
Alfiler 62 de IC356

Ajuste L355 y L353 para que se obtenga la forma de onda como se ve en la figure b.

Ajuste L362 para que la parte Ⓐ sea mínima.

Fig. 7-7 Ajuste del rollo de detección de SECAM

## 7.7 CUANDO SE REEMPLAZA EL MONTAJE DE VIDEO-AUDIO

- Antes del ajuste, compruebe el ajuste del filtro de peine como se escribe en la sección 7.4. (solamente para el sistema NTSC).
- Ejecute el ajuste del tamaño V, ajuste de la anchura de V.BLK (I), el ajuste de la anchura de H.BLK, el ajuste de la anchura de V.BLK (2), el equilibrio de blanco, el puesto del estandard de PIONEER, y el ajuste de azul como se escriben en la sección 7.6.

## 7.8 CUANDO SE REMEDIA EL MONTAJE DE TUNER-NICAM

- Los puntos de prueba del ajuste (TP) están colocados en el montaje de TUNER-NICAM si no hay otra indicación.

### 7.8.1 Ajuste de la Sección de Sintonizador

- Los artículos que van a ajustarse aquí dependen de los sistemas locales de estandard de TV. Los sistemas a los que los ajustes necesitan se escriben en la fila respectiva de la tabla.
- Para la señal necesaria de entrada, vea la tabla 7 - 1. Si no se escribe en la tabla, emita las señales al terminal de entrada de antena. Observe la figura 7 - 9 cuando conecta.
- Cuando recibe el otro sistema de TV después del ajuste con el sistema de TV especificado, la condición de la recepción será insuficiente. En este caso, reajuste con el sistema corriente de TV o con el mejor sistema especifi cado en la tabla 7 - 1.
- El ajuste de trampa en la etapa 3 se escribe separadamente en otra tabla. Vea la sección 7.8.2.
- Este modelo está equipado de la función de AFT (Automatic Fine Tuning-Sintonización fina automática).

Tabla 7 - 1

•Los valores mostrados como "fp" en la tabla son los valores de referencia. Ponga a la frecuencia más cerca y al canal que son disponibles en su área.

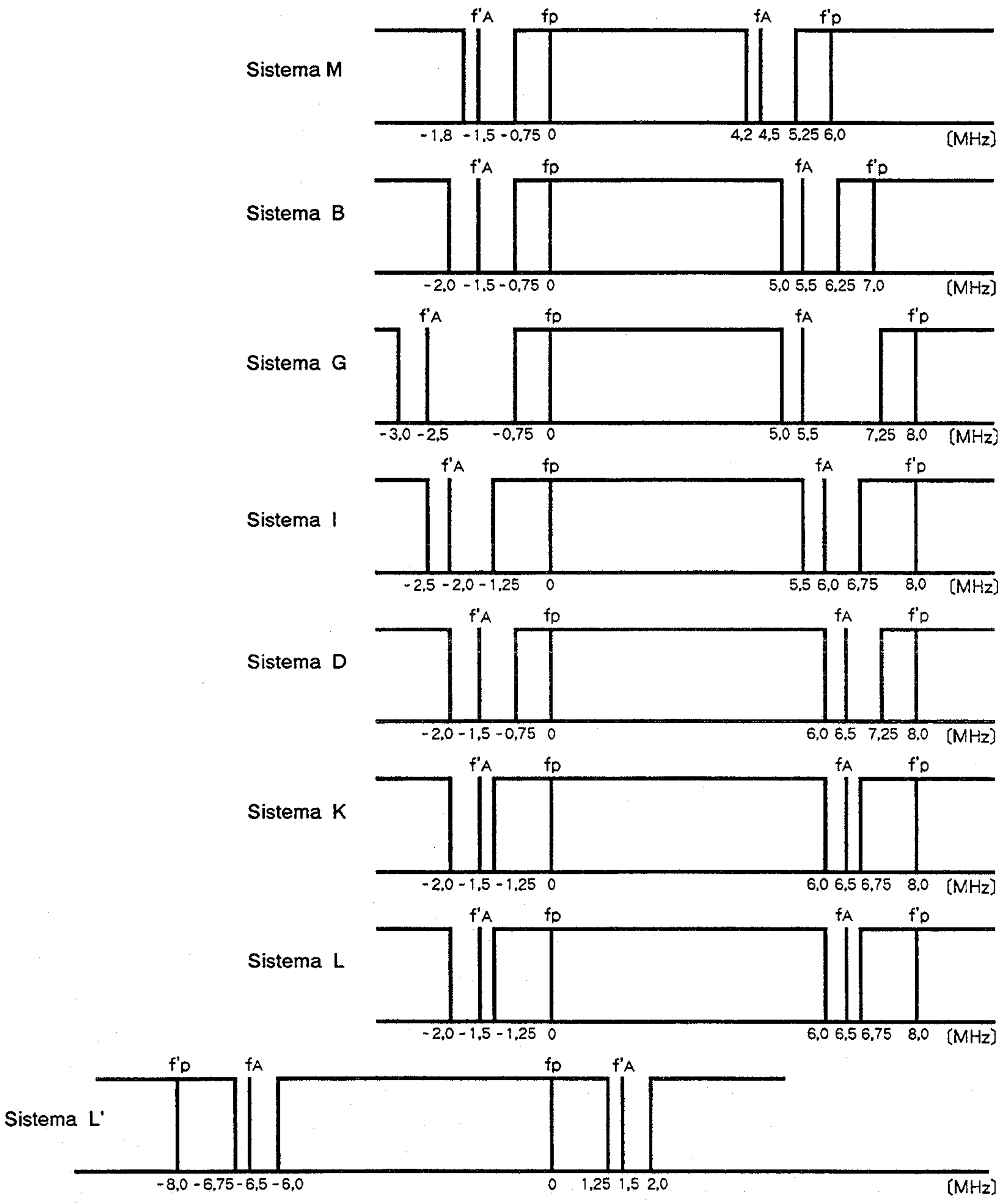
| Número de señal | Contentos de señal | Nivel de entrada de antena *2 | Puesto del sistema SG *1 |
|---|---|---|---|
| ① | Señal no modulada de 33,4MHz | 90 dB $\mu$V | L' |
| ② | Señal no modulada de 39,9MHz | 90 dB $\mu$V | |
| ③ | fp=119,25MHz, Barra de color<br>Audio ; 1kHz, 100% MOD. monoaural | 80 dB $\mu$V | Cualquiera de M, B, G, I, D, K, L y L' (B y G son las mejores.) |
| ④ | fp=196,25MHz, Explosición multiplada<br>Audio ; 1kHz, 100% MOD. monoaural | 58 dB $\mu$V | Cualquiera de M, B, G, I, D y K (B y G son las mejores.) |
| ⑤ | fp=175,25MHz, 100% blanco<br>Audio ; 1kHz, 100% MOD. estéreo | 80 dB $\mu$V | |
| ⑥ | fp=487,25MHz, Barra de color<br>Audio ; 400Hz, 100% MOD. monoaural | 80dB $\mu$V | L |
| ⑦ | fp=55,25MHz, Barra de color<br>Audio ; 1kHz, 100% MOD. ± 25kHz dev, monoaural | 80 dB $\mu$V | M (US) |
| ⑧ | fp=67,25MHz, Trampa de cruz<br>Audio ; 300Hz, 30% MOD. estéreo (solo el canal L) | 80 dB $\mu$V | |
| ⑨ | fp=175,25MHz, 10 etapas<br>Audio ; 5kHz, 30% MOD. estéreo (solo el canal L) | 80 dB $\mu$V | |

*1: Ajuste el sistema SG al sistema local de TV.

*2: Ajuste el nivel de audio de SG a un valor que es más bajo que el de la entrada de antena por el valor que se escribe abajo.
Sistema M : 6dB , Sistema B : 10dB , Sistema G : 10dB , Sistema I : 7dB , Sistema D : 7dB
Sistema K : 7dB , Sistema L : 10dB , Sistema L' : 10dB

| Número de etapa | Artículo de ajuste | Sistema al que el ajuste requires | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|---|
| 1 | Ajuste de L' OSC | L' | Entrada de señal ① a TP-IF IN (P-12) | L16 (T) | Ajuste la frecuencia de TP-TRAP IN (P-23) a 38,9MHz ± 20kHz. (Use el analizador de espectro.) |
| 2 | Circuito de equilibrio del circuito de invertidor |  | Entrada de señal ② a TP-IF IN (P-12) | VR11 (T) | Disminuya el elemento de 39,9 MHz de TP-TRAP IN (P-23). (Use el analizador de espectro.) |
| 3 | Ajuste de trampa | Este ajuste depende del sistema local de TV. vea la sección 7.8.2. |  |  |  |
| 4 | Ajuste de LLD de video | M, B/G, I, D/K, L, L' | Señal ③ | L22 (T) | Compruebe que la señal de la barra de color está provista de TP-VIDEO (P-17). Si no, ajuste L22 para proveer la barra de color. |
|  |  |  |  |  | Disminuya el elemento de señal de color de TP-VIDEO (P-17). |
| 5 | Ajuste de AGC *1 | M, B/G, I, D/K, L, L' | Señal ④ | VR17 (T) | Ajuste la tensión de CC de TP-AGC (P-14) a 6,5V ± 0,3V. |
| 6 | Ajuste de nivel de video *1 |  | Señal ⑤ | VR13 (T) | Ajuste el nivel de salida de la señal de video en TP-VIDEO (P-17) a 2,2Vp-p ± 0,1V. |
| 7 | Ajuste de nivel de SECAM | L, L' | Señal ⑥ | VR14 (T) | Ajuste el nivel de detección de video en TP-VIDEO (P-17) a 2,2Vp-p ± 0,2V. |
| 8 | Ajuste de VCO | M, B/G, I, D/K | Señal ⑤ | L30 (T) | Compruebe que la señal de video (100% blanco) está provista en TP-LOCK (P-20). Si no, ajuste la señal de video. |
| 9 |  |  |  | —— | Mida la tensión de CC de TP-APC (P-16) cuando TP-IF AGC (P-15) y TP-GND (P-11) están corto-circuitados. |
| 10 |  |  |  | L30 (T) | Retenga TP-IF AGC ( P-15) y TP-GND (P-11), y mida y ajuste la tensión de CC de TP-APC (P-16) al valor de ± 100 mV con respecto al valor que se obtiene en la etapa 9. |
| 11 | Ajuste de distorsión de audio en US | Sistema de M (solamente en US) | Señal ⑦ | L32 (T) | Ajuste para disminuir la salida de distorsión de 1kHz de la onda de seno a TP-A/L (P-21: terminal de salida del canal izquierdo ). |
| 12 | Ajuste de separación de estéreo en US |  | Señal ⑧ | RV03(IC) | Disminuya la salida de TP-A/L (P-21: terminal de salida del canal izquierdo). |
|  |  |  | Señal ⑨ | RV06(IC) | Disminuya la salida de TP-A/L (P-21: terminal de salida del canal izquierdo). |

*1: A1 ajustar AGC y el nivel de video en el área de sistema L o L', use SG de M, B, G, I, D o K (SG de B o G es la mejor). Si no se ajustan apropiadamente estos artículos, saturación blanca, ruido o zumbido pueden ser observados en la pantalla o la pantalla puede ser obscura.


Sistema M
f'A fp fA f'p
-1,8 -1,5 -0,75 0 4,2 4,5 5,25 6,0 (MHz)
Sistema B
f'A fp fA f'p
-2,0 -1,5 -0,75 0 5,0 5,5 6,25 7,0 (MHz)
Sistema G
f'A fp fA f'p
-3,0 -2,5 -0,75 0 5,0 5,5 7,25 8,0 (MHz)
Sistema I
f'A fp fA f'p
-2,5 -2,0 -1,25 0 5,5 6,0 6,75 8,0 (MHz)
Sistema D
f'A fp fA f'p
-2,0 -1,5 -0,75 0 6,0 6,5 7,25 8,0 (MHz)
Sistema K
f'A fp fA f'p
-2,0 -1,5 -1,25 0 6,0 6,5 6,75 8,0 (MHz)
Sistema L
f'A fp fA f'p
-2,0 -1,5 -1,25 0 6,0 6,5 6,75 8,0 (MHz)
Sistema L'
f'p fA fp f'A
-8,0 -6,75 -6,5 -6,0 0 1,25 1,5 2,0 (MHz)

Rota: fp ; Portador de video
fA ; Portador de audio
f'p ; Portador de video adyacente superior
f'A ;Portador de video adyacente inferior
IF ;38,9(MHz)

Fig. 7 – 8 Relación entre las frecuencias de portador de video y audio en los sistemas de TV

### 7.8.2 Ajuste de trampa

- Este ajuste se escribe separadamente porque el porcedimiento de ajuste de la sección de sintonizador depende del sistema de estandard de TV.
- Para la señal que se entra, vea la tabla 7-2. Conecte la señal al terminal de entrada de antena.
- Alternadamente ajuste F13 y F19 al puesto óptimo.

Tabla 7 - 2 Señales de entrada

• Use el canal especificado para la señal ①.

| Número de señal | Video | Audio | Nivel de entrada de antena | Canal |
|---|---|---|---|---|
| Señal ① | Barra de color | 1kHz, 100% MOD. | 80dB $\mu$V | Canal libre |
| Señal ② | | | | Canal próximo alto de la señal ①. |
| Señal ③ | | | | Canal próximo bajo de la señal ①. |

Nota:Ajuste el nivel de audio de SG a un valor que es más bajo que el de la entrada de antena por el valor que se escribe abajo.
Sistema M : 6dB , Sistema B : 10dB , Sistema G : 10dB , Sistema I : 7dB , Sistema D : 7dB
Sistema K : 7dB , Sistema L : 10dB , Sistema L' : 10dB

### ● Para el sistema M

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 3- 1 | Ajuste de trampa de video adyacente | Señal ② | F12 (T) | Ajuste el elemento de 32,9MHz de TP- SAW IN (P- 19) al mínimo. |
| 3- 2 | Ajuste de trampa de audio | Señal ① | F13, F19 (T) | Ajuste el elemento de 34,4MHz de TP- SAW IN (P- 19) al mínimo. |
| 3- 3 | Ajuste de trampa de audio adyacente | Señal ③ | F18 (T) | Ajuste el elemento de 40,4MHz de TP- SAW IN (P- 19) al mínimo. |

### ● Para el sistema B

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 3- 1 | Ajuste de trampa de video adyacente | Señal ② | F12 (T) | Ajuste el elemento de 31,9 MHz de TP- SAW IN (P- 19) al mínimo. |
| 3- 2 | Ajuste de trampa de audio | Señal ① | F13, F19 (T) | Ajuste el elemento de 33,4MHz de TP- SAW IN (P- 19) al mínimo. |
| 3- 3 | Ajuste de trampa de audio adyacente | Señal ③ | F18 (T) | Ajuste el elemento de 40,4MHz de TP- SAW IN (P19) al mínimo. |

### ● Para el sistema G

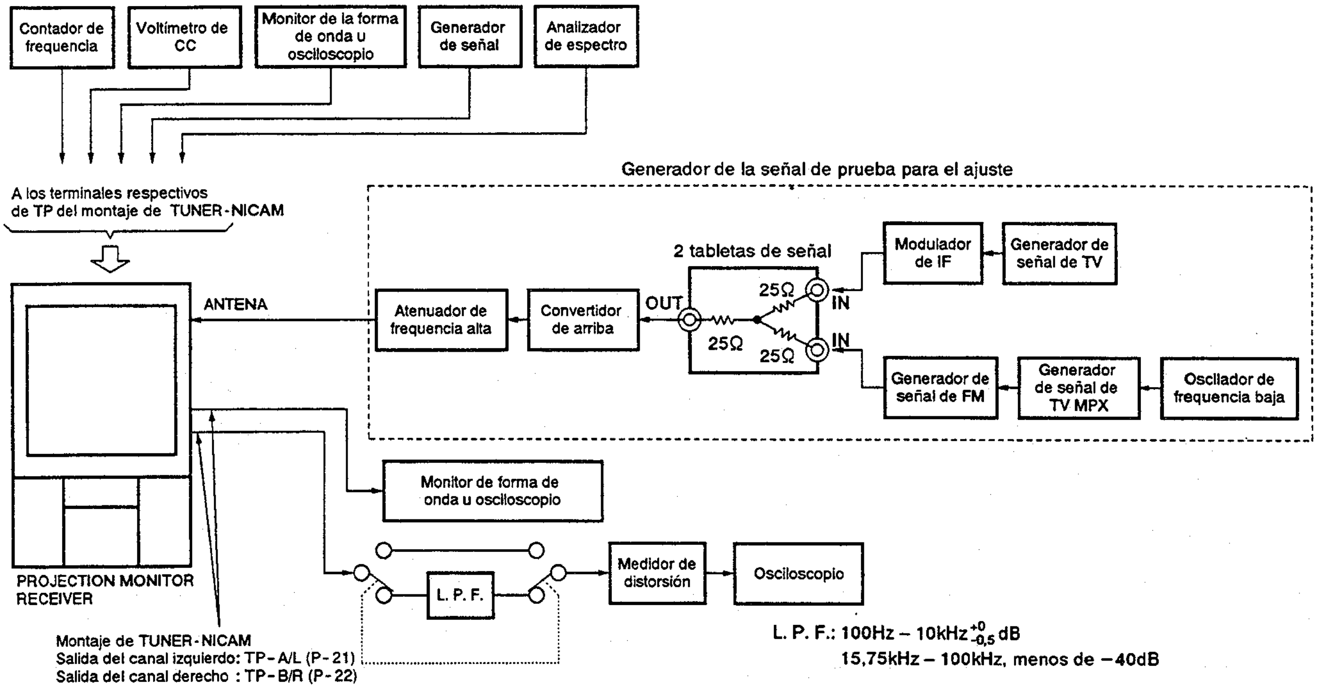
| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 3- 1 | Ajuste de F12 | —— | F12 (T) | Ajuste solamente cuando la imagen no se muestra correctamente. |
| 3- 2 | Ajuste de trampa de audio | Señal ① | F13, F19 (T) | Ajuste el elemento de 33,4MHz de TP- SAW IN (P- 19) al mínimo. |
| 3- 3 | Ajuste de F18 | —— | F18 (T) | Ajuste solamente cuando la imagen no se muestra correctamente. |

## ● Para el sistema I

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 3-1 | Ajuste de trampa del audio | Señal ① | F12 (T) | Ajuste el elemento de 32,9MHz de TP-SAW IN (P-19) al mínimo. |
| 3-2 | Ajuste de F13 y F19 | —— | F13, F19 (T) | Ajuste solamente cuando la pantalla no se muestra correctamente. |
| 3-3 | Ajuste de F18 | —— | F18 (T) | |

## ● Para el sistema D, K, L o L'

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 3-1 | Ajuste de trampa del audio | Señal ① | F12 (T) | Ajuste el elemento de 32,4MHz de TP-SAW IN (P-19) al mínimo. |
| 3-2 | Ajuste de F13 y F19 | —— | F13, F19 (T) | Ajuste solamente cuando la imagen no se muestra correctamente. |
| 3-3 | Ajuste de trampa de audio adyacente | Señal ③ | F18 (T) | Ajuste el elemento de 40,4MHz de TP-SAW IN (P-19) al mínimo. |


Contador de frequencia
Voltímetro de CC
Monitor de la forma de onda u osciloscopio
Generador de señal
Analizador de espectro
A los terminales respectivos de TP del montaje de TUNER-NICAM
Generador de la señal de prueba para el ajuste
ANTENA
Atenuador de frequencia alta
Convertidor de arriba
OUT
2 tabletas de señal
25Ω
25Ω
25Ω
IN
IN
Modulador de IF
Generador de señal de TV
Generador de señal de FM
Generador de señal de TV MPX
OsciIador de frequencia baja
Monitor de forma de onda u osciloscopio
PROJECTION MONITOR RECEIVER
L. P. F.
Medidor de distorsión
Osciloscopio
Montaje de TUNER-NICAM
Salida del canal izquierdo: TP-A/L (P-21)
Salida del canal derecho : TP-B/R (P-22)

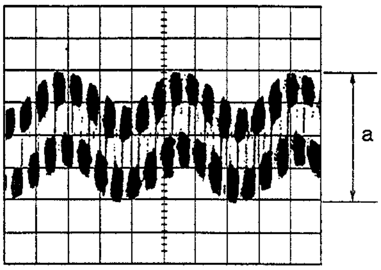
L. P. F.: 100Hz – 10kHz$^{+0}_{-0,5}$dB
15,75kHz – 100kHz, menos de –40dB

Fig. 7-9 Diagrama de conexión cuando se ajusta la sección del sintonizador

### 7.8.3 Ajuste de la sección de NICAM

- Este ajuste es necesario en el área de audio múltiplex de B/G CCIR.
- Ejecute este ajuste después de 7.8.1 Ajuste de la sección de sintonizador y 7.8.2 Ajuste de trampa.

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Ajuste de estéreo de CCIR FM | Señal libre de B/G CCIR audio múltiplex (STEREO o DUAL) | F201 (T) | Conecte un osciloscopio al alfiler 8 de IC202 y observe la forma de onda (figura 7-10).<br>Ajuste el amplitud (figura 7-10 a ) de la forma de onda al máximo. |



H : 5 $\mu$sec/div., V : 100 mV/div.

Fig. 7-10 Forma de onda del alfiler 8 de IC202

Ajuste " a " al máximo.

Nota:
Si no se ajusta apropiadamente, una forma de onda se mostrará cuyo amplitud es más pequeño y más plano que la onda mostrada en la figura 7-10.

## 7.9 CUANDO SE REEMPLAZA EL MONTAJE DE TUNER-NICAM

- Se requiere no ajuste.

## 7.10 CUANDO SE REMEDIA EL MONTAJE DE AM-DEMOD

- Este ajuste es necesario solamente para el sistema L o L'.
- Los puntos de prueba para el ajuste (TP) están colocados en el montaje de AM-DEMOD.

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Ajuste de detección de AM | Alimente un canal del sistema L o L' al terminal de entrada de antena. La señal de audio debe ser de 1kHz, 50% MOD. AM, cuando no se requiere la señal de video. | L1018 (A) | Ajuste para que la onda de seno de 1kHz se salga desde el alfiler 5 de IC1012 con la mínima distorsión y con el nivel máximo. |
| 2 | Ajuste de nivel de audio |  | VR1012 (A) | Ajuste para que el nivel de la onda de seno de 1kHz que se sale desde el alfiler 5 de CN1016 sea de 200mVrms ± 50mV. |

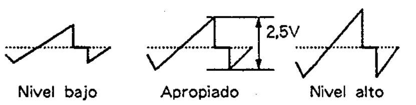
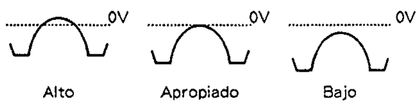
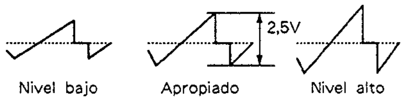
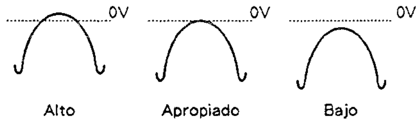
## 7.11 CUANDO SE REEMPLAZA EL MONTAJE DE AM-DEMOD

- Se requiere no ajuste.

## 7.12 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE CONVERGENCE

### 7.12.1 AJUSTE DEL NIVEL PICO DE LA FORMA DE ONDA DE PARABOLA

- Los puntos de prueba para el ajuste (TP) están colocados en el montaje de CONVERGENCE.
- Ejecute este ajuste solamente cuando se mueve la convergencia.

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste | |
|---|---|---|---|---|
| 1 | H SAWTOOTH WAVEFORM LEVEL | VR701 (C) | En TP-H.NOKO (P-805), ajuste el nivel pico de salida de la forma de onda a 2,5V p-p. |  |
| 2 | TOP LEVEL OF H PARABOLA WAVRFORM | VR750 (C) | En TP-H.PARA (P-802), ajuste el nivel pico de salida de la forma de onda a 0V ± 20mV. |  |
| 3 | V SAWTOOTH WAVEFORM LEVEL | VR702 (C) | A TP-V.NOKO (P-803), ajuste el nivel pico de salida de la forma de onda a 2,5Vp-p. |  |
| 4 | TOP LEVEL OF V PARABOLA WAVEFORM | VR749(C) | En TP-V.PARA (P-801), ajuste el nivel pico de salida de la forma de onda a 0V ± 20mV. |  |

### 7.12.2 AJUSTE DE CONVERGENCIA

- Movimiento de la pantalla y los puntos de ajuste se escriben sumariamente en las figuras 7-14 y 7-15.
- Señal de entrada es la señal de trampa de cruz para PAL.
- Ejecute el ajuste de posición con las teclas de control remoto como sigue. (Refiérase a la figura 7-11.)
- Después de ejecutar todos los ajustes, retenga el cortocircuito para obtener la pantalla blanca y ejecute el ajuste anterior.
- Correcte la línea vertical con la señal horizontal para la corrección y correcte la línea horizontal con la señal vertical para la corrección.
- Los puntos de ajuste están colocados en el montaje de CONVERGENCE.

※1: Pantalla de ajuste de convergencia y la manera como manejar

Ⓐ : Cada vez que presione el interruptor de la sección del control frontal, la pantalla cambia desde ② a ⑨.
Ⓑ : Para cambiar desde ADJ ↓ ↑ a ADJ ←→, presione la tecla 4 o 6 del cotnrol remoto.
Ⓑ' : Para cambiar desde AJD ←→ a ADJ ↓ ↑, presione la tecla 2 o 8 del control remoto.
Ⓒ : Con la pantalla ADJ ↓ ↑ el mostrador se cambia desde ③, ⑤, ⑦ a ⑨ cuando presiona la tecla 5 del control remoto.
Ⓒ' : Con la pantalla ADJ ←→, el mostrador cambia desde ②, ④, ⑥ a ⑧ cuando presiona la tecla 5 del control remoto.

| | |
|---|---|
| Ajuste de rojo horizontal | : Con la pantalla ② o ⑥, presione 2 (superior) o 8 (inferior) de las teclas del control remoto o el interruptor SELECT/ADJ de la unidad principal. |
| Ajuste de rojo vertical | : Con la pantalla ③ o ⑦, presione la tecla 4 (izquierda) o 6 (derecha) del control remoto o el interruptor SELECT/ADJ de la unidad principal. |
| Ajuste de azul horizontal | : Con la pantalla ④ o ⑧, presione la tecla 2 (superior) o 8 (inferior) del control remoto o el interruptor SELECT/ADJ de la unidad principal. |
| Ajuste de azul vertical | : Con la pantalla ⑤ o ⑨, presione la tecla 4 (izquierda) o 6 (derecha) del control remoto o el interruptor SELECT/ADJ de la unidad principal. |

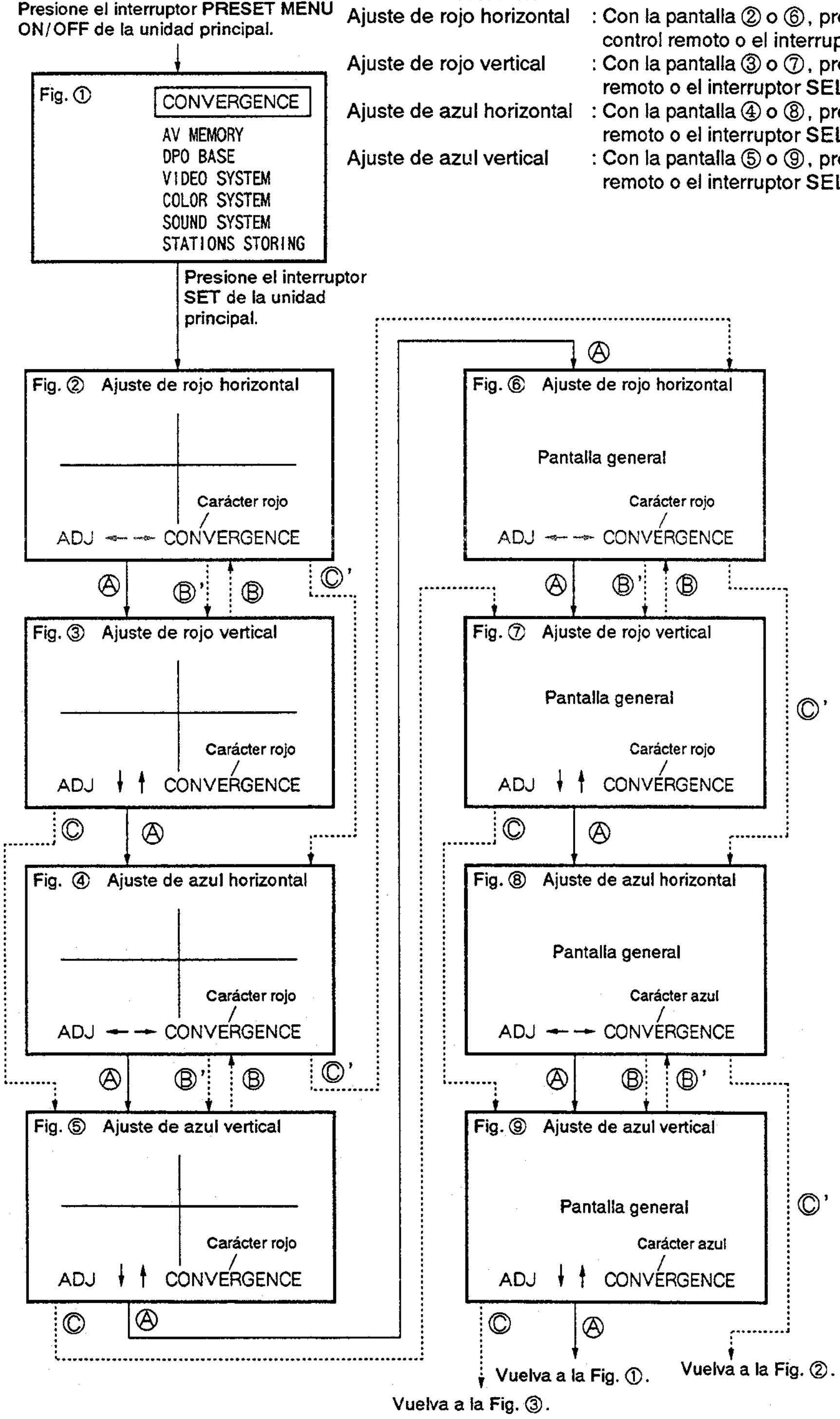

Presione el interruptor PRESET MENU ON/OFF de la unidad principal.
Fig. ①
CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING
Presione el interruptor SET de la unidad principal.
Fig. ② Ajuste de rojo horizontal
Carácter rojo
ADJ ←→ CONVERGENCE
Fig. ③ Ajuste de rojo vertical
Carácter rojo
ADJ ↓↑ CONVERGENCE
Fig. ④ Ajuste de azul horizontal
Carácter rojo
ADJ ←→ CONVERGENCE
Fig. ⑤ Ajuste de azul vertical
Carácter rojo
ADJ ↓↑ CONVERGENCE
Fig. ⑥ Ajuste de rojo horizontal
Pantalla general
Carácter rojo
ADJ ←→ CONVERGENCE
Fig. ⑦ Ajuste de rojo vertical
Pantalla general
Carácter rojo
ADJ ↓↑ CONVERGENCE
Fig. ⑧ Ajuste de azul horizontal
Pantalla general
Carácter azul
ADJ ←→ CONVERGENCE
Fig. ⑨ Ajuste de azul vertical
Pantalla general
Carácter azul
ADJ ↓↑ CONVERGENCE
Ⓐ
Ⓑ'
Ⓑ
Ⓒ
Ⓒ'
Vuelva a la Fig. ①.
Vuelva a la Fig. ②.
Vuelva a la Fig. ③.

Fig. 7-11 Funcionamiento de las teclas en la pantalla de convergencia

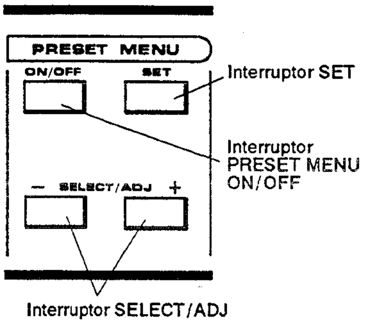

PRESET MENU
ON/OFF
SET
Interruptor SET
Interruptor PRESET MENU ON/OFF
– SELECT/ADJ +
Interruptor SELECT/ADJ

Fig. 7-12 Disposición de las teclas de la unidad principal

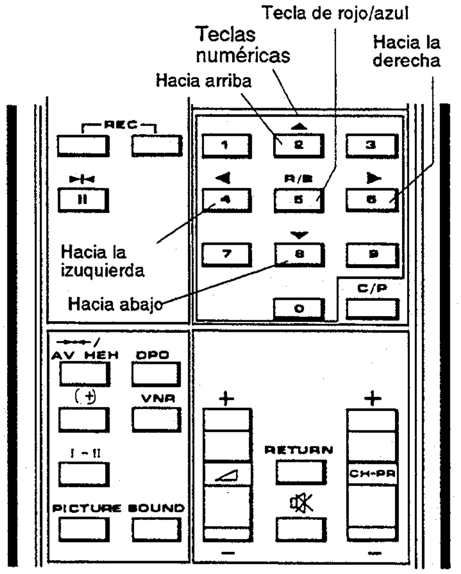

Tecla de rojo/azul
Teclas numéricas
Hacia la derecha
Hacia arriba
Hacia la izquierda
Hacia abajo
REC
1
2
3
4
R/B
5
6
7
8
9
0
C/P
AV MEM
DPO
VNR
I - II
RETURN
CH-PR
PICTURE
SOUND
+
–

Fig.7-13
Disposición de las teclas del control remoto

### (1) AJUSTE DE LA LINEA VERDE

- Porque las líneas verdes se usan como una referencia cuando se ajustan rojo y azul, asegúrese de ajustar adecua damente.
- Corto-circuite TP - R (TP - 375), TP - B (TP - 374) y TP - GND (TP - 377) en el montaje VIDEO - AUDIO, y después, se aparecen las líneas verdes. Retenga el corto-circuito después del ajuste de la línea verde.

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|
| 1 | GH - PIN | VR705 (C) | Ajuste la línea verde a la línea recta. (Refiérase a las figuras 7 - 14 y 7 - 15.) |
| 2 | GH - KEY | VR704 (C) | |
| 3 | GV - SKEW | VR706 (C) | |
| 4 | GV - BOW | VR707 (C) | |
| 5 | GV - KEY | VR708 (C) | |
| 6 | GV - S - KEY | VR709 (C) | |
| 7 | GV - PIN | VR710 (C) | |
| 8 | Repita las etapas 1 a 7 hasta que se obtenga la mejor pantalla que posible. | | |

## (2) AJUSTE DE LA LINEA ROJA

- Corto-circuite TP-B (TP-374) y TP-GND (TP-377) en el montaje VIDEO-AUDIO, y despés las líneas verdes y las líneas rojas se aparecen en la pantalla. Retenga el corto-circuito después del ajuste de la línea roja.
- Ajuste cada VR para que las líneas rojas se converjan con las líneas verdes para obtener las líneas amarillas.
- Después del ajuste, ejecute el ajuste fino mientras observando la toda pantalla.

### ● Ajuste de compensación de la distorsión rojo horizontal

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|
| 1 | RH-SKEW | VR711 (C) | Ajuste las líneas rojas, verticales en el centro de la pantalla sin distorsión ni inclinación. (Refiérase a la figura 7-14.) |
| 2 | RH-BOW | VR712 (C) | |
| 3 | Repita las etapas 1 y 2. | | |
| 4 | RH-KEY | VR713 (C) | Ajuste las líneas rojas verticales en las secciones derecha e izquierda de la pantalla a las líneas rectas sin inclinación. (Refiérase a la figura 7-14.) |
| 5 | RH-S-KEY | VR714 (C) | |
| 6 | Repita las etapas 4 y 5. | | |
| 7 | RH-PIN | VR715 (C) | Ajuste las líneas rojas verticales en las secciones derecha e izquierda de la pantalla a las líneas rectas sin distorsión. (Refiérase a la figura 7-14.) |
| 8 | RH-S-PIN | VR716 (C) | |
| 9 | Repita las etapas 7 y 8 o las etapas 1 a 8. | | |

### ● Ajuste de compensación del intervalo de rojo horizontal

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|
| 1 | RH-POSITION | Teclas 4 y 6 del contol remoto | Ajuste para que las líneas rojas verticales se converjan con las líneas verdes verticales en el centro de la pantal la para obtener las líneas amarillas. (Esto se sirve como un ajuste de referencia, pero si las líneas se divergen durange el ajuste, ejecute el ajuste después de considerar esta divergencia.) |
| 2 | RH-LIN | VR717 (C) | Ajuste para que las líneas rojas verticales converjan con las líneas verdes en las secciones derecha e izquierda de la pantalla para obtener las líneas amarillas.<br>(Refiérase a la figura 7-14.) |
| 3 | RH-4-LIN | VR720 (C) | |
| 4 | RH-S-LIN | VR718 (C) | |
| 5 | RH-SIZE | VR719 (C) | |
| 6 | Repita las etapas 1 a 5. | | |

### ● Ajuste de compensación de la distorsión de rojo vertical

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|
| 1 | RV-SKEW | VR721 (C) | Ajuste las líneas rojas horizontales en el centro de la pantalla a las líneas rectas sin distorsión ni inclinación. (Refiérase a la figura 7-15.) |
| 2 | RV-BOW | VR722 (C) | |
| 3 | Repita las etapas 1 y 2. | | |
| 4 | RV-KEY | VR723 (C) | Ajuste las líneas rojas horizontales en las secciones inferior y superior de la pantalla convergen a las líneas rectas sin inclinación. (Refiérase a la figura 7-15.) |
| 5 | RV-S- | VR724 (C) | |
| 6 | RV-S-PIN | VR726 (C) | |
| 7 | RV-PIN | VR725 (C) | |
| 8 | Repita las etapas 4 a 7 o las etapas 1 a 7. | | |

### ● Ajuste de compensación del intervalo de rojo vertical

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|
| 1 | RV-LIN | VR727 (C) | Ajuste para que las líneas rojas horizontales se converjan a las líneas verdes horizontales en el centro de la pantalla para obtener las líneas amarillas. (Este se sirve como un ajuste de referencia, pero si las líneas divergen durante el ajuste, ejecute el ajuste después de considerar esta divergencia.) (Refiérase a la figura 7-15.) |
| 2 | RV-S-LIN | VR729 (C) | |
| 3 | RV-POSITION | Las teclas 2 y 8 del control remoto. | |
| 4 | RV-SIZE | VR728 (C) | Ajuste para que las líneas rojas horizontales se converjan a las líneas verdes horizontales en las secciones inferior y superior de la pantalla para obtener las líneas amarillas.<br>(Refiérase a la figura 7-15.) |
| 5 | Repita las etapas 1 a 4. | | |

## (3) AJUSTE DE LA LINEA AZUL

- Corto-circuite TP-R (TP-375) y TP-GND (TP-377) en el montaje de VIDEO-AUDIO, y después, las líneas verdes y azules se aparecen en la pantalla. Retenga el corto-circuito después del ajuste de las líneas azules.
- Ajuste cada VR para que las líneas azules se converjan con las líneas verdes para obtener las líneas ciánicas.
- Después del ajuste, ejecute el ajuste fino mientras observando la toda pantalla.

### • Ajuste de compensación de la distorsión de azul horizontal

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|
| 1 | BH-SKEW | VR730 (C) | Observe las líneas azules verticales en la pantalla, y ajuste de la misma manera que el ajuste de compensación de la distorsión de rojo horizontal. |
| 2 | BH-BOW | VR731 (C) | |
| 3 | BH-KEY | VR732 (C) | |
| 4 | BH-S-KEY | VR733 (C) | |
| 5 | BH-PIN | VR734 (C) | |
| 6 | BH-S-PIN | VR735 (C) | |

### • Ajuste de compensación del intervalo de azul horizontal

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|
| 1 | BH-POSITION | Las teclas 4 y 6 del control | Ajuste para que las líneas azules se converjan con las líneas verdes para obtener las líneas ciánicas de la misma manera que el ajuste de compensación del intervalo de rojo horizontal. |
| 2 | BH-LIN | VR736 (C) | |
| 3 | BH-4-LIN | VR739 (C) | |
| 4 | BH-S-LIN | VR737 (C) | |
| 5 | BH-SIZE | VR738 (C) | |

### • Ajuste de compensación de la distorsión de azul vertical

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|
| 1 | BV-SKEW | VR740 (C) | Observe las líneas azules horizontales en la pantalla, y ajuste de la misma manera que el ajuste de compensación de la distorsión de rojo vertical. |
| 2 | BV-BOW | VR741 (C) | |
| 3 | BV-KEY | VR742 (C) | |
| 4 | BV-S-KEY | VR743 (C) | |
| 5 | BV-S-PIN | VR745 (C) | |
| 6 | BV-PIN | VR744 (C) | |

### • Ajuste de compensación del intervalo de azul vertical

| Número de etapa | Artículo de ajuste | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|
| 1 | BV-LIN | VR746 (C) | Ajuste para que las líneas azules se converjan con las líneas verdes para obtener las líneas ciánicas de la misma manera que el ajsute de compensación del invervalo de rojo vertical. |
| 2 | BV-S-LIN | VR748 (C) | |
| 3 | BV-POSITION | Teclas 2 y 8 del control remoto | |
| 4 | BV-SIZE | VR747 (C) | |

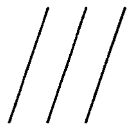
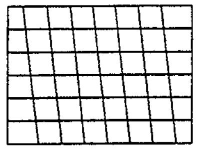
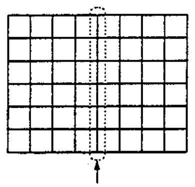
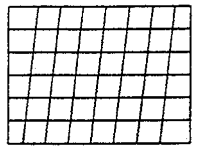
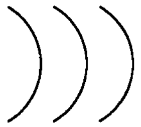
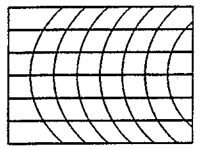
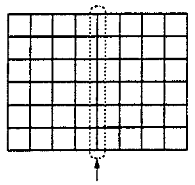
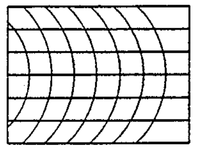
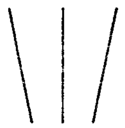
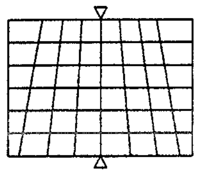
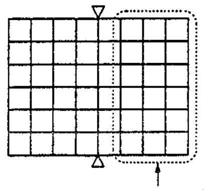
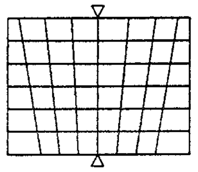
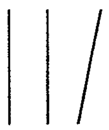
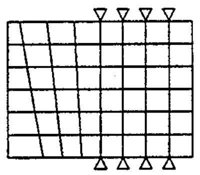
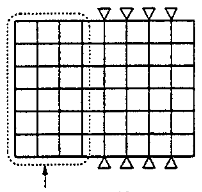
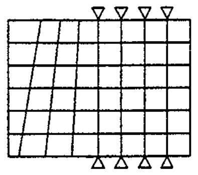
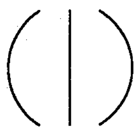
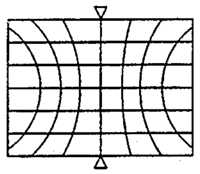
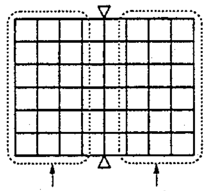
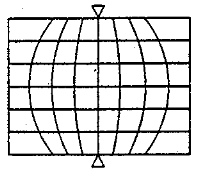
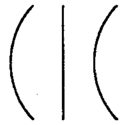
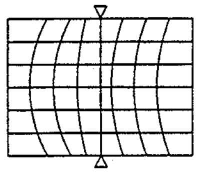
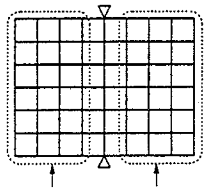
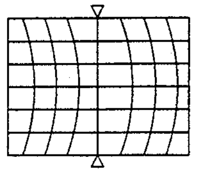
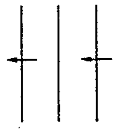
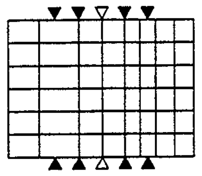
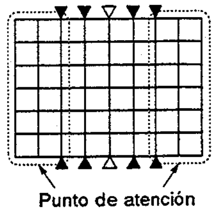
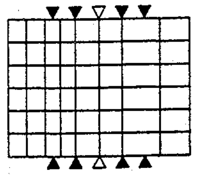
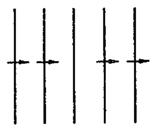
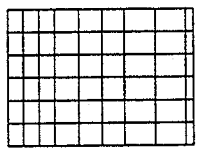
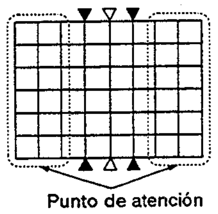
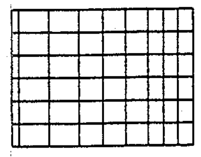
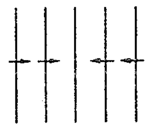
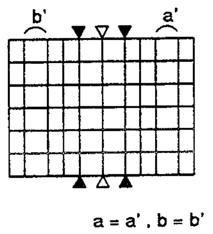
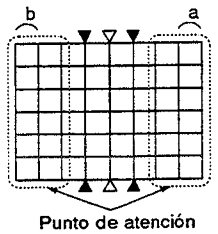
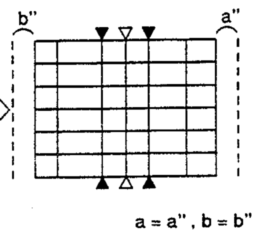
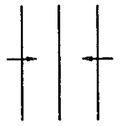
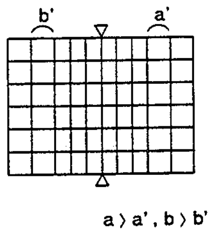
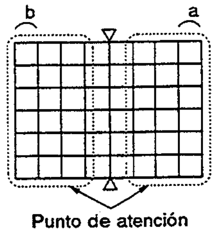
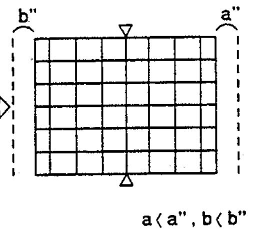
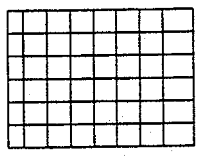
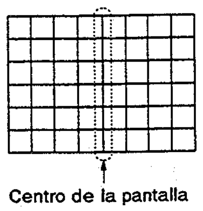
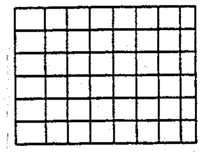
| Compensación | Señal y marca *1 | Pantalla distorsionada | Pantalla correctada | Pantalla distorsionada | Punto de ajuste | |
|---|---|---|---|---|---|---|
| Compensación de distorsión horizontal | H-SKEW  |  |  |  | Observe las líneas verticales en el centro de la pantalla (donde no hay movimiento de H-KEY, H-S-KEY, H-PIN ni H-S-PIN), y después ajuste las líneas verticales para eliminar las líneas inclinadas. | Para obtener las mejores líneas posibles, ajuste las líneas verticales en el centro de la pantalla siguiendo el procedimiento de ajuste para H-SKEW y H-BOW. |
| | H-BOW  |  |  |  | Observe las líneas verticales en el centro de la pantalla, y después ajuste las líneas torcidas a las líneas rectas. | |
| | H-KEY  |  |  |  | Observe las líneas verticales en la porción derecha de la pantalla (donde no hay movimiento de H - S - KEY), y después ajuste las líneas verticales para eliminar las líneas inclinadas. | Para eliminar las líneas inclinadas, ajuste las líneas verticales en las secciones derecha e izquierda de la pantalla siguiendo el procedimiento de ajuste para H - KEY y H - S - KEY. |
| | H-S-KEY  |  |  |  | Observe las líneas verticales en la porción izquierda de la pantalla, y después ajuste las líneas verticales para eliminar las líneas inclinadas. | |
| | H-PIN  |  |  |  | Observe las líneas verticales en las secciones derecha e izquierda de la pantalla, y después ajuste las líneas torcidas para simetrizar derecha e izquierda por H-S-PIN. Después ajuste las líneas verticales torcidas en las secciones derecha e izquierda en la pantalla para recticar las por H-PIN. | Para eliminar la distorsión, rectifique las líneas verticales en las secciones derecha e izquierda de la pantalla siguiendo el procedimiento de ajuste de H-PIN y H-S-PIN. |
| | H-S-PIN  |  |  |  | | |

Fig. 7-14 Compensaión horizontal

| Compensación | Señal y marca *1 | Pantalla distorsionada | Pantalla correctada | Pantalla distorsionada | Punto de ajuste | |
|---|---|---|---|---|---|---|
| Compensación del intervalo horizontal | H-LIN<br> |  | <br> |  | Sigue el procedimiento de ajuste de H-LIN, H-4-LIN y H-S-LIN (acuerde el grado de movimiento de H-SIZE ) para el intervalo de las líneas verticales en la porción derecha de la pantalla sea el mismo que de las líneas en la porción izquierda, con el punto central que no mueva. Por ejemplo, cuando las líneas verticales en la porción dere cha se mueven en la dirección derecha, deslice las líneas verticales en la porción izquierda con el mismo grado del intervalo en la dirección hacia la izquierda. | Las líneas verticales en el centro de la pantalla convergen a las líneas verdes por H - POSITION. Y también, las líneas verticales en las secciones derecha e izquierda de la pantalla convergen a las líneas verdes por H-LIN, H-4- LIN, H-S-LIN y H-SIZE . |
| | H-4-LIN<br> |  | <br> |  | | |
| | H-S-LIN<br> | <br> | <br> | <br> | | |
| | H-SIZE<br> | <br> | <br> | <br> | Converja las líneas verticales en las secciones de derecha e izquierda de la pantalla a las líneas verdes. | |
| | H-POSITION |  | <br> |  | Las líneas verticales de la pantalla mueven en la dirección paralela hacia la derecha e izquierda con el control de convergencia del control remoto o de la unidad principal. Cuando se mueven las líneas verticales libremente, considere el grado del movimiento. | |

Nota: KEY es la abreviación de KEYSTONE,
y LIN es la abreviación de LINEARITY
▽: muestra los puntos que no se mueven.
▼: muestra los puntos que apenas se mueven.
*1:Sketch is printed on the p.c. board.

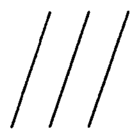
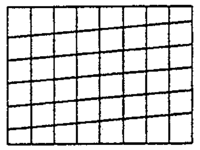
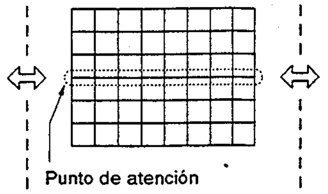
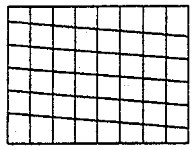
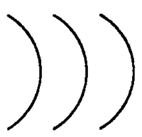
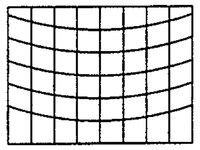
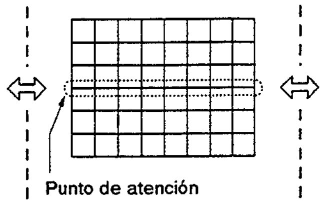
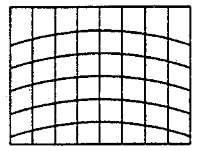
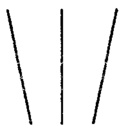
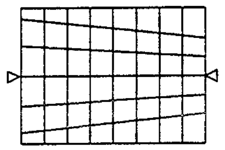
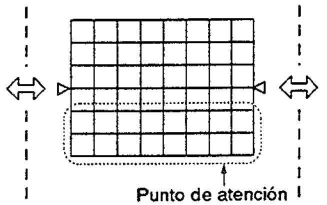
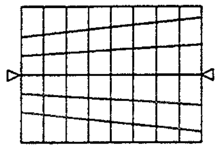
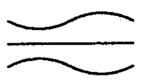
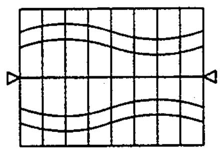
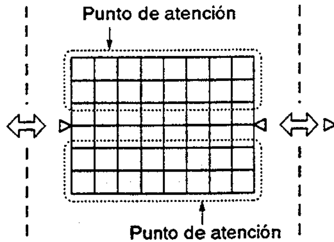
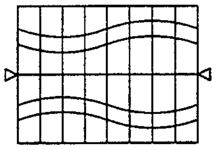
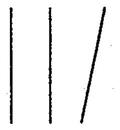
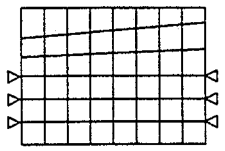
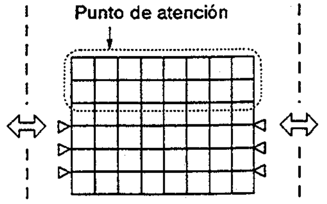
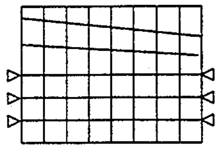
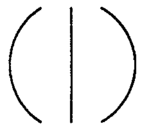
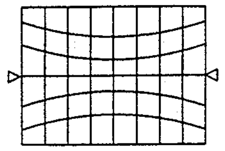
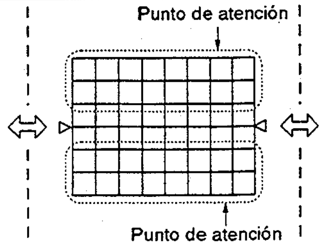
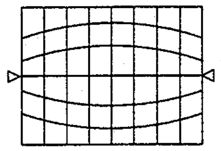
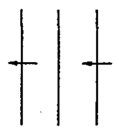
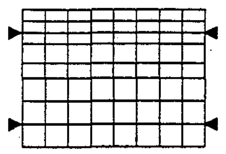
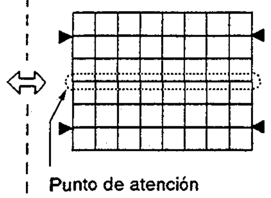
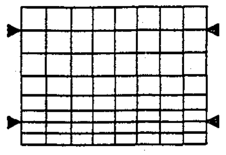
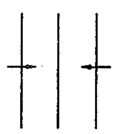
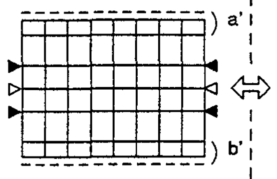
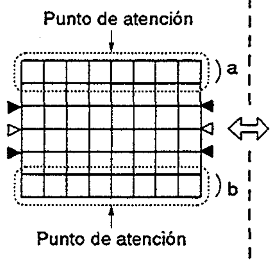
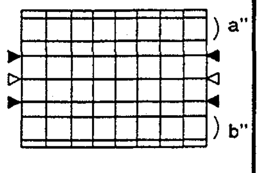
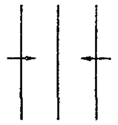
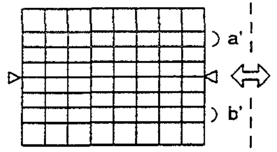
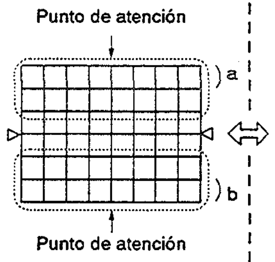
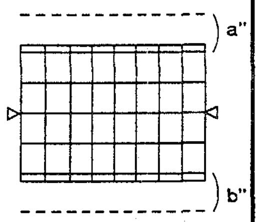
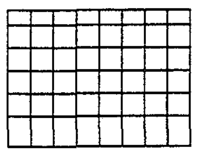
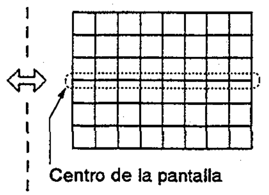
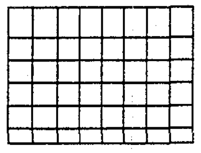
| Compensación | Señal y marca *1 | Pantalla distorsionada | Pantalla correctada | Pantalla distorsionada | Punto de ajuste | |
|---|---|---|---|---|---|---|
| Compensación de distorsión vertical | V-SKEW<br> |  |  |  | Observe las líneas horizontales en el centro de la pantalla (donde no hay movimiento de V-KEY, V-SKEY ni V- PIN), y después ajuste las líneas horizontales para eliminar las líneas inclinadas. | Para obtener las mejores líneas posibles, ajuste las líneas horizontales en el centro de la pantalla siguiendo el procedimiento de ajuste de V-SKEW y V-BOW. |
| | V-BOW<br> |  |  |  | Observe las líneas horizontales en el centro de la pantalla, y después ajuste las líneas torcidas a las líneas rectas. | |
| | V-KEY<br> |  |  |  | Observe las líneas horizontales en la sección inferior de la pantalla (donde no hay el movimiento de V-S-KEY), y después ajuste las líneas horizontales para eliminar las líneas inclinadas. | Para eliminar las líneas inclinadas, ajuste las líneas horizontales en las secciones superior e inferior de la pantalla siguiendo el procedimiento de ajuste de V-KEY, V-S-PIN y V-S-KEY. |
| | V-S-PIN<br> |  |  |  | Observe las líneas horizontales en las secciones superior e inferior, y después ajuste las líneas torcidas a las líneas rectas. | |
| | V-S-KEY<br> |  |  |  | Observe las líneas horizontales en la sección superior de la pantalla, y después ajuste las líneas horizontales para eliminar las líneas inclinadas. | |
| | V-PIN<br> |  |  |  | Observe las líneas horizontales en las secciones superior e inferior de la pantalla, y después ajuste las líneas torcidas a las líneas rectas. | Para eliminar la distorsión, enderezca las líneas en las secciones seperior e inferior de la pantalla siguiendo el procedimiento de ajuste de V-PIN. |

Fig. 7-15 Compensación vertical

| Compensación | Señal y marca | Pantalla distorsionada | Pantalla correctada | Pantalla distorsionada | Punto de ajuste | |
|---|---|---|---|---|---|---|
| Compensación del intervalo vertical | V-LIN<br> |  | <br> |  | Converjan las líneas horizontales en el centro de la pantalla a las líneas verdes. En este momento, asegúrese de dejar mismo espacio de las líneas horizontales hacia la sección supeior y hacia la sección inferior desde el punto central. Sin embargo, cuando el mismo intervalo no se puede obtener, ajuste POSITION, V-LIN y V-S-LIN otra vez. | Las líneas horizontales en el centro de la pàntalla se convergen a las líneas verdes con V-LIN, V-S-LIN y V-POSITION.<br>Y también, las líneas horizontales en las secciones superior e inferior de la pantalla se convergen a las líneas verdes con V-SIZE. |
| | V-S-LIN<br> | <br> <br>a' = a , b' = b | <br> | <br> <br>a" = a , b" = b | | |
| | V-SIZE<br> | <br> <br>a' ⟨ a , b' ⟨ b | <br> | <br> <br>a" ⟩ a , b" ⟩ b | Converjan las líneas horizontales en las secciones superior e inferior de la pantalla a las líneas verdes. | |
| | V-POSITION |  | <br> |  | Las líneas horizontales de la pantalla se mueven en la dirección parallola en la pantalla superior e inferior con el control de convergencia del control remoto o de la unidad principal.<br>Cuando las líneas horizontales se mueven libremente, considere el grado de movimiento. | |

Nota: KEY es la abreviación de KEYSTONE, y LIN es la abreviación de LINEARITY.
▽ : muestra los puntos que no se mueben.
▼ : muestra los puntos que apenas se mueven.

## 7.13 CUANDO SE REMEDIA EL MONTAJE DE MICROCOMPUTER

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Al reemplazar IC307 (X24C08P) en el montaje de microcomputer, el estandard de PIONEER, la base de DPO y la posición de convergencia se ajustan en el centro de las gamas variables. Reajústelos de acuerdo con los procedimientos de ajuste especificados. Los ajustes por un cliente se ejectuará a su referencia. | | | |
| 2 | Ajuste de la posición de la carácter "Telop". | Señal libre de video | VR301 (M) | Emita la señal de prueba de cruz, y coloque la cruz en el centro de la pantalla. |

## 7.14 CUANDO SE REEMPLAZA EL MONTAJE DE MICROCOMPUTER

- Ajuste la posición de la carácter "Telop" como se ve en la sección 7.13 y ejecute el ajuste por un cliente.

## 7.15 CUANDO SE REMEDIA EL MONTAJE DE I/O-TEXT

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Ajuste de entrada de 13,5MHz VCO | No entrada de señal | L605 (I) | Ajuste la frecuencia de oscilación al alfiler 17 de IC602 en el montaje de I/O-TEXT a 13,5MHz ± 100kHz. |

## 7.16 CUANDO SE REEMPLAZA EL MONTAJE DE I/O-TEXT

- Se requiere no ajuste.

## 7.17 CUANDO SE REMEDIA EL MONTAJE DE DPO

- Ajuste la sensitividad de DPO como se escribe en la sección 7.26.

## 7.18 CUANDO SE REEMPLAZA EL MONTAJE DE DPO

- Se requiere no ajuste.

## 7.19 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE DYNAMIC FOCUS

- Compruebe el foco (cuatro esquinas de la pantalla). Si el foco no está apropiado, ajuste VR1 al mejor estado.

## 7.20 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE HIGH VOLTAGE CONTROL

- Compruebe H. SIZE, V. SIZE y convergencia si es necesario.

## 7.21 CUANDO SE REMEDIA O SE REEMPLAZA EL MONTAJE DE R, G O B CRT DRIVE

- El equilibro de blanco provee la mejor pantalla. Si no, ajuste el equilibrio de blanco como sigue.

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Ajuste de equilibrio de blanco | Radiodifusión ordinaria | Pantalla (VR1)<br>(R)<br>(B) | Ajuste el blanco cuando no se obtiene el ajuste apropiado. Ponga COLOR del control remoto al mínimo, ajuste la pantalla de VR. |

## 7.22 CUANDO SE REEMPLAZA EL MONTAJE DE CRT DE R, G O B

- El procedimiento de reemplazo del montaje de CRT de R, G o B se escribe en la sección "8. Reemplazo del montaje de CRT".
- Cuando uno o dos tubos se reemplazan, ajuste los nuevos tubos de acuerdo con los tubos anteriores.
  Si todos los tres tubos se reemplazan, primero ajuste G, y después ajuste otros dos tubos con el tubo G.

| Número de etapa | Artículo de ajuste | Señal de entrada | Punto de ajuste | Procedimiento de ajuste |
|---|---|---|---|---|
| 1 | Angulo de yugo de desviación y el ajuste de centrado | Señal de cruz (o la señal de cruz para la prueba de convergencia: refiérase a la figura 7-13.) | Imán de centrado del yugo de desviación del montaje de CRT reemplazado (refiérase a la figura 7-19.) | Ajuste el ángulo del yugo de desviación hasta que la cruz de color del montaje de CRT reemplazado sea paralelo con la cruz del color del montaje de CRT que no se ha reemplazado. |
| | | | | Reajuste la posición de convergencia (mientras por manejando CNT-a-MAX (MIN)-a-CNT en el modo de FACTORY ADJ) cuando se reemplaza el montaje rojo o azul. |
| | | | | Ajuste el imán de centrado del yugo de desviación en el montaje de CRT reemplazado hasta que la cruz converja. |
| 2 | Ajuste de foco | Trampa de cruz | El foco de VR reemplazado de color (VR1) y el montaje de lente conectado al montaje reemplazado de CRT (refiérase a la figura 7.20 y la figura 7-21.) | Ajuste el foco del montaje del CRT reemplazado al estado óptimo. (Si se cambia la posición de convergencia, será más fácil de observar. Vuélvala sin falta a su posición original después del ajuste.) |
| 3 | Ajuste de convergencia | | Ajuste la convergencia de color del montaje de CRT reemplazado de acuerdo con el color de un montaje que no se ha reemplazado. Vea la sección 7.12.2 AJUSTE DE LA CONVERGENCE para los detalles del procedimiento. (Cuando se reemplaza el montaje G de CRT, ajuste la convergencia de color de R, G y B.) | |
| 4 | Equilibrio de blanco | Señal de barra de color sin la señal de color | Pantalla VR(VR1)<br>VR651 (R)<br>VR653 (B) } VR(V) Carretera | Ajuste la calidad de pantalla al estandard con el control remoto. |
| | | | | Ajuste la pantalla de VR de color reemplazada hasta que el color gris se aparezca en el área obscura del color. |
| | | | | Ajuste la carretera VR de color reemplazada hasta que el color en el área brillante sea blanco. [Cuando se reemplaza el montaje G de CRT, ajuste un poco la carretera VR (R) y (B). ] |
| | | | | Ajuste el estandard PIONEER de brillo solamente cuando los ajustes escritos arriba no funcionan bien por causa del brillo anormal. |
| 5 | Ajuste de estandard de PIONEER | Ajuste como se escribe en las etapas 8 a 14 en la sección 7.6.1. | | |

## 7.23 CUANDO SE REEMPLAZA EL MONTAJE DE LENTE

- Remueva la lámina lenticular, y sujete el papel de dibujo con una cinta plástica en su lugar. (Refiérase a la figura 7-20.) Ajuste el foco de lente del montaje que se monta recientemente, observando la pantalla mostrada en el papel de dibujo.

## 7.24 CUANDO SE REMEDIAN O SE REEMPLAZAN OTROS MONTAJES

- Se requiere no ajuste.

## 7.25 AJUSTE DE BASE DE DPO

El funcionamiento de DPO es para juzgar el nivel de la luz externa, y se funciona cuando el interruptor DPO (S859) está puesto en ON, ajustando la calidad de la pantalla (contraste, color, brillo) del PROJECTION MONITOR RECEIVER de acuerdo con la luz externa.

Hay dos clases en la calidad de la pantalla. Cuando está brillante, la calidad primera de DPO (DPO LIGHT) se selecciona. Cuando está obscuro, la calidad segunda de DPO (DPO DARK) se selecciona. Los datos sobre estos dos clases de la calidad están memorizados en IC307 (la memoria no-volátil).

Por eso, cuando IC307 (o los circuitos periféricos) se remedian o se reemplazan, o cuando el montaje de microcomputador se reemplaza, la calidad de la pantalla debe ser memorizada en IC307 otra vez.

Para memorizar el dato de la calidad de la pantalla DPO, refiérase a los manuales de instrucciones. Los valores ajustados en la fábrica se muestran aquí para la referencia. Los valores están sujetos a cambio.

- DPO LIGHT
  - ◍ (COLOR) : 0
  - ◐ (CONTRAST) : 0
  - ☼ (BRIGHT) : 0
- DPO DARK
  - ◍ (COLOR) : −2
  - ◐ (CONTRAST) : −15
  - ☼ (BRIGHT) : +3

Nota: Para este ajuste, no es necesario de activar el modo de FACTORY ADJ.

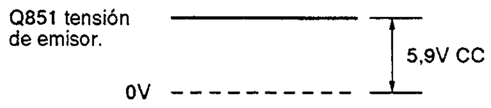
## 7.26 AJUSTE DE SENSITIVIDAD DE DPO

La sensitividad de la sección de la luz DPO se ajusta para determinar el nivel de la luz externa al que funcionamiento de DPO se activa. Este ajuste se hace por VR851 en el montaje de DPO (refiérase de la figura 7 - 21.), y debe ser ejecutado de acuerdo con la preferencia de un cliente. El procedimiento de ajuste que se usa en la fábrica se escribe para la referencia.

(1) Usando un bulbo de luz incandescente como una fuente de luz, la luz pica directamente hacia la sección sensitiva de la luz con el nivel de 50 lux de DPO.

(2) Ponga el interruptor DPO (S859) en ON. "DPO ON" se aparece en la pantalla.

(3) El montaje de DPO VR51 se ajusta para obtener una tensión de 5,9V ( ± 0,1V) al emisor Q851.



## 7.27 METODO DE MEDIDA DE TENSION DE ANODO

Desconecte el cable de anodo de FBT como se escribe en la figura 7 - 16. Mida en el punto donde el cable entra en FBT.

Aviso: Tenga cuidado en medir esta tensión muy alta. Las tensiones altas se queden también en los alrededores de las tablas de circuito (montaje CRT DRIVE, montaje POWER SUPPLY - DEFLECTION).

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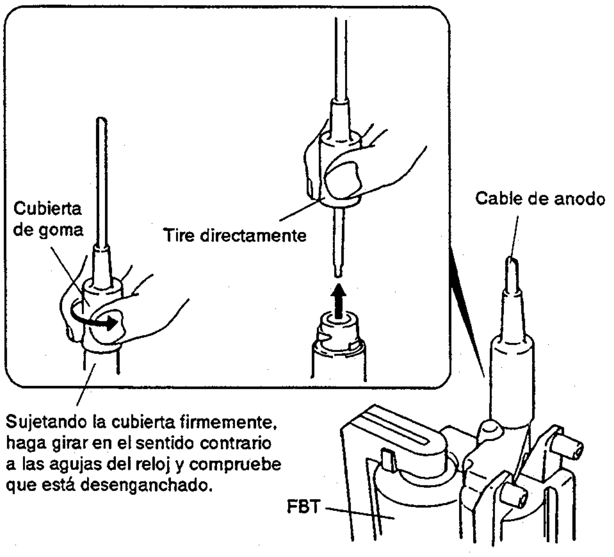
Antes de remover el cable de anodo, desconecte la alimentación. Quite el cable de CA y haga una unidad descargarse por más de 1 minuto.

Nota: Determine la extensión de la cubierta de goma antes de desconectar el cable.


Cubierta de goma
Tire directamente
Cable de anodo
Sujetando la cubierta firmemente, haga girar en el sentido contrario a las agujas del reloj y compruebe que está desenganchado.
FBT

Nota: Al conectar el cable otra vez, ejecute en el orden contrario. Después de reconectar, tire el cable para asegurar que está fijo.

Fig. 7-16 Desconexión del cable de anodo

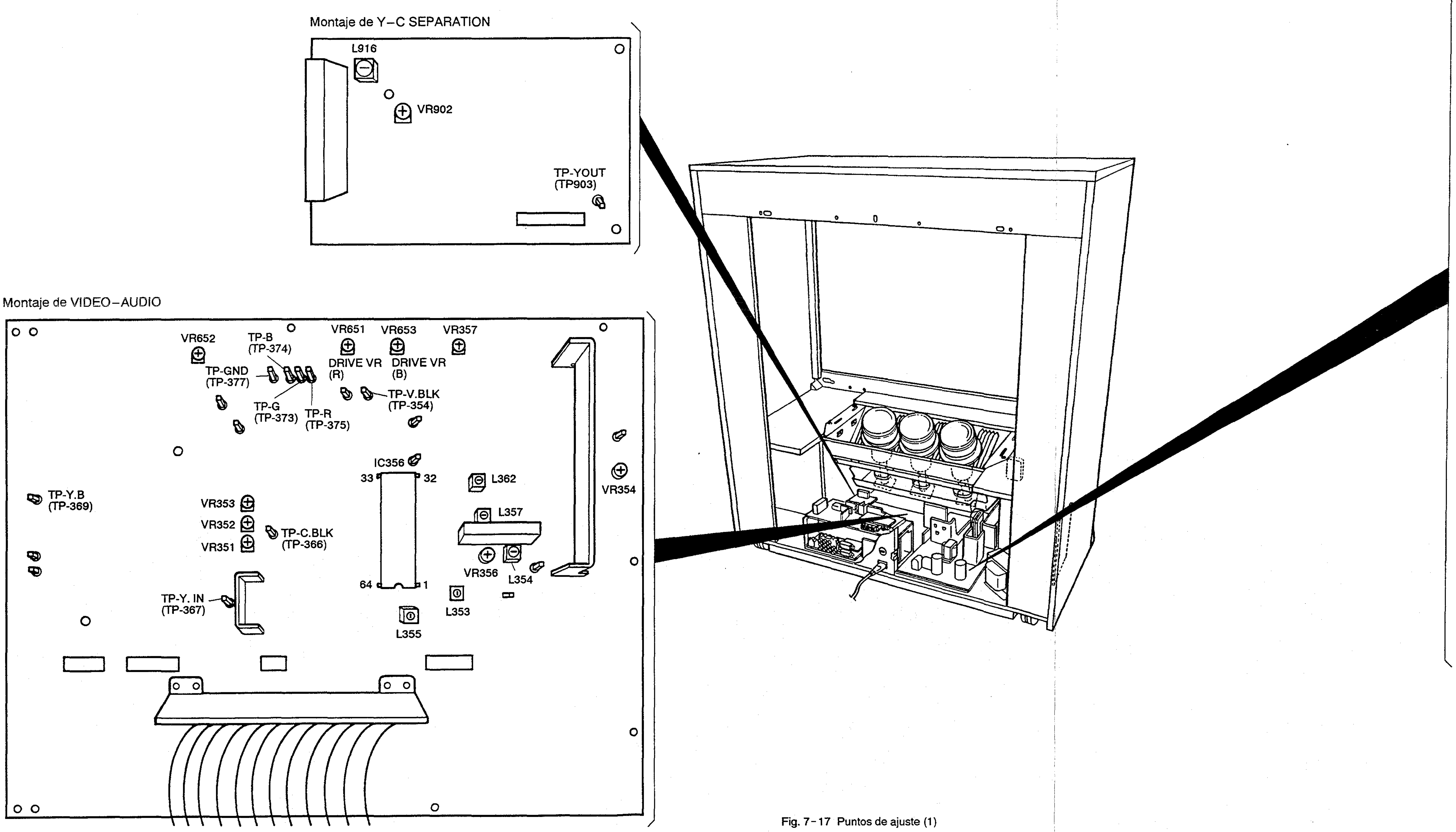

Montaje de Y-C SEPARATION
L916
VR902
TP-YOUT
(TP903)
Montaje de VIDEO-AUDIO
VR652
TP-B
(TP-374)
VR651
VR653
VR357
DRIVE VR
(R)
DRIVE VR
(B)
TP-GND
(TP-377)
TP-V.BLK
(TP-354)
TP-G
(TP-373)
TP-R
(TP-375)
IC356
33
32
L362
VR354
TP-Y.B
(TP-369)
VR353
VR352
TP-C.BLK
(TP-366)
VR351
L357
VR356
L354
64
1
L353
TP-Y. IN
(TP-367)
L355

Fig. 7-17 Puntos de ajuste (1)

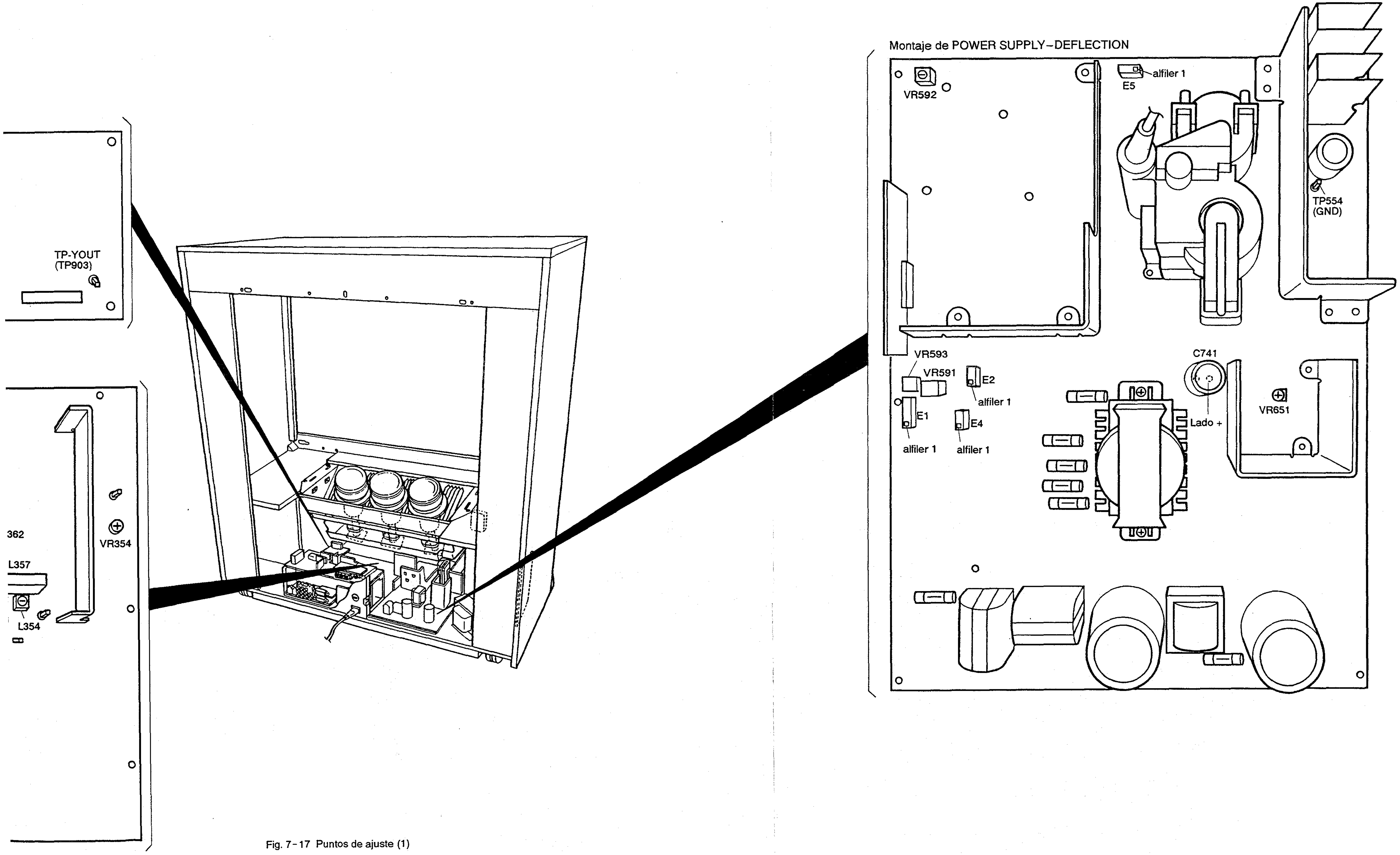

TP-YOUT
(TP903)
362
L357
VR354
L354
Montaje de POWER SUPPLY-DEFLECTION
VR592
alfiler 1
E5
TP554
(GND)
VR593
VR591
E2
alfiler 1
E1
E4
alfiler 1
alfiler 1
C741
Lado +
VR651

Fig. 7-17 Puntos de ajuste (1)

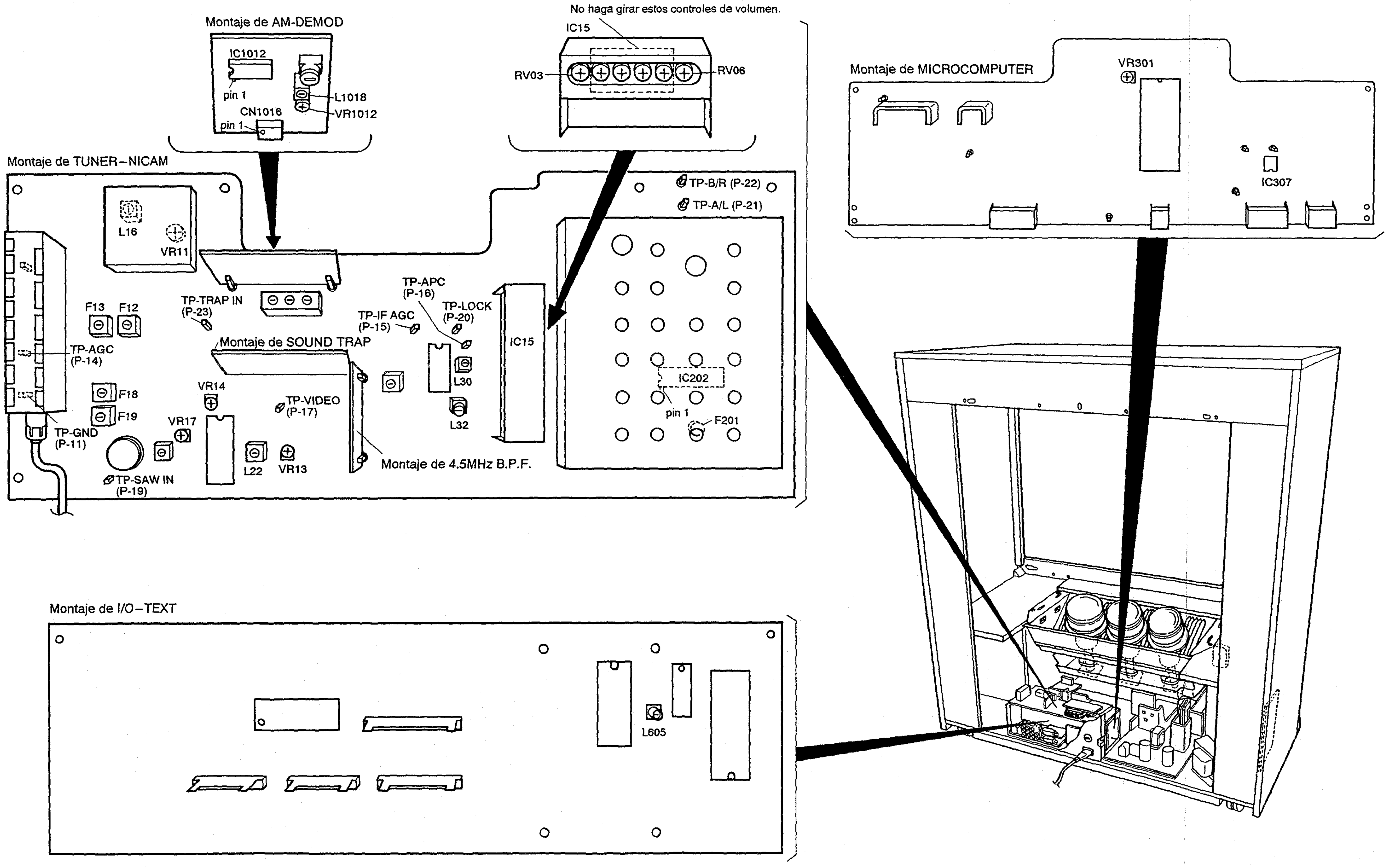

No haga girar estos controles de volumen.
IC15
RV03
RV06
Montaje de AM-DEMOD
IC1012
pin 1
L1018
VR1012
CN1016
pin 1
Montaje de TUNER–NICAM
L16
VR11
F13
F12
TP-AGC
(P-14)
TP-TRAP IN
(P-23)
Montaje de SOUND TRAP
TP-IF AGC
(P-15)
TP-APC
(P-16)
TP-LOCK
(P-20)
IC15
TP-B/R (P-22)
TP-A/L (P-21)
IC202
pin 1
F201
F18
F19
VR14
VR17
TP-VIDEO
(P-17)
L30
L32
TP-GND
(P-11)
TP-SAW IN
(P-19)
L22
VR13
Montaje de 4.5MHz B.P.F.
Montaje de MICROCOMPUTER
VR301
IC307
Montaje de I/O–TEXT
L605

Fig. 7-18 Puntos de ajuste (2)

Yogo de desviación
Espaciador

estos controles de volumen.

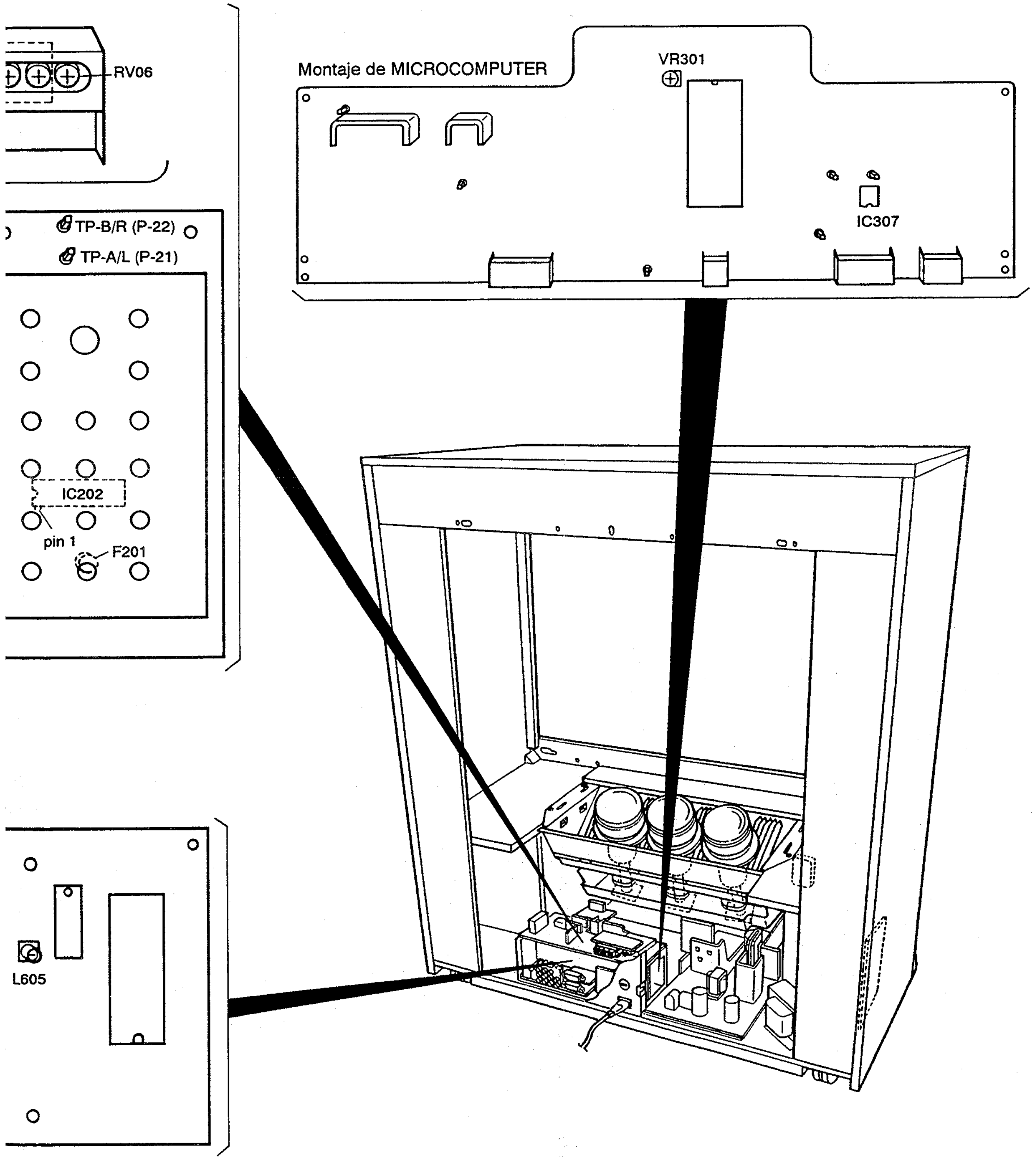
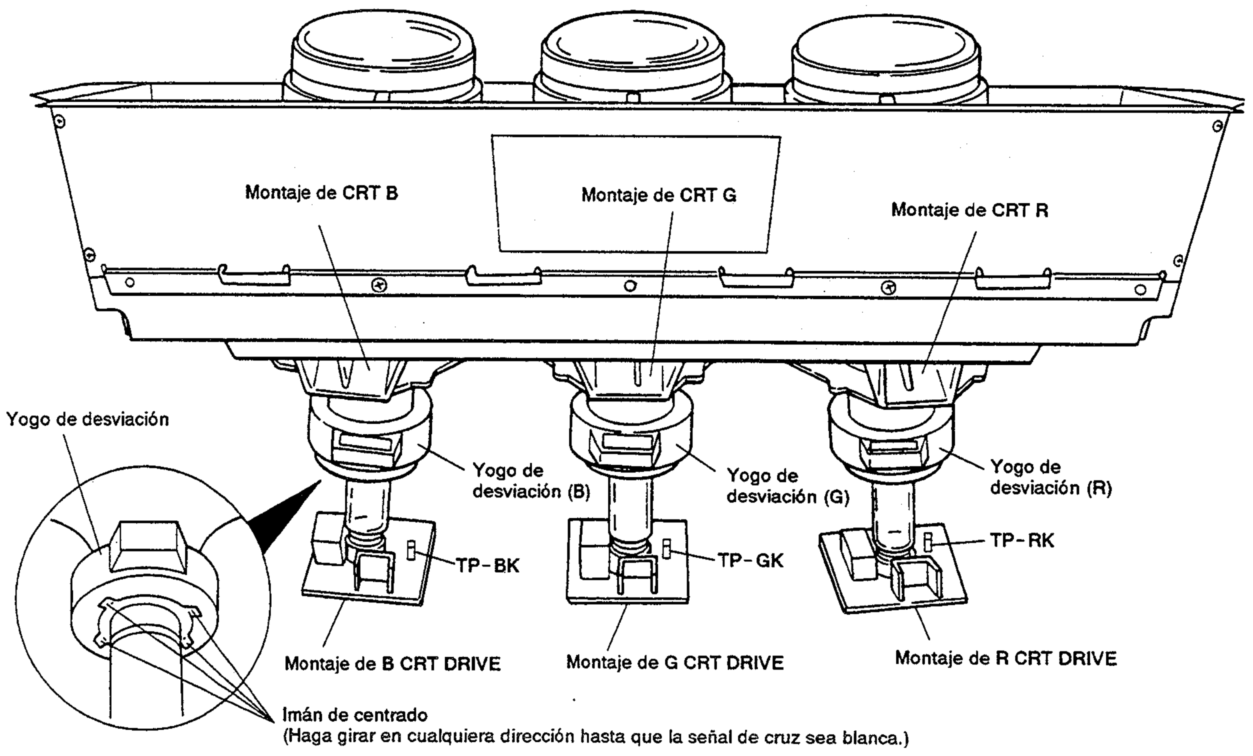

RV06
Montaje de MICROCOMPUTER
VR301
IC307
TP-B/R (P-22)
TP-A/L (P-21)
IC202
pin 1
F201
L605

Fig. 7-18 Puntos de ajuste (2)


Montaje de CRT B
Montaje de CRT G
Montaje de CRT R
Yogo de desviación
Yogo de desviación (B)
Yogo de desviación (G)
Yogo de desviación (R)
TP-BK
TP-GK
TP-RK
Montaje de B CRT DRIVE
Montaje de G CRT DRIVE
Montaje de R CRT DRIVE
Imán de centrado

(Haga girar en cualquiera dirección hasta que la señal de cruz sea blanca.)

Fig. 7-19 Punto de ajuste (3)

Nota: Sujete un papel trasluciente como un papel de dibujo, mientras insertando los espaciadores de 7mm de espesor para colocarlos en las posiciones regulares de la superficie de la pantalla. Use los espaciadores que proveen mismos espesos en ambos lados izquierdo y derecho.

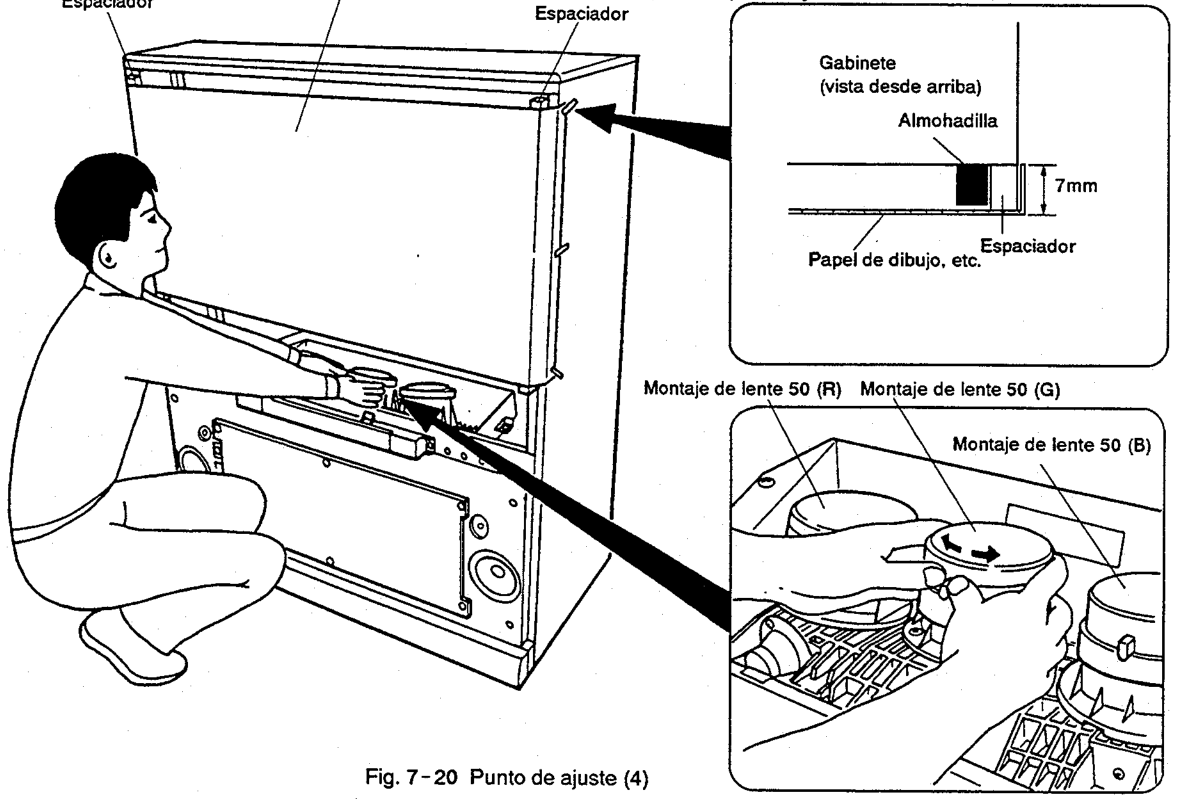
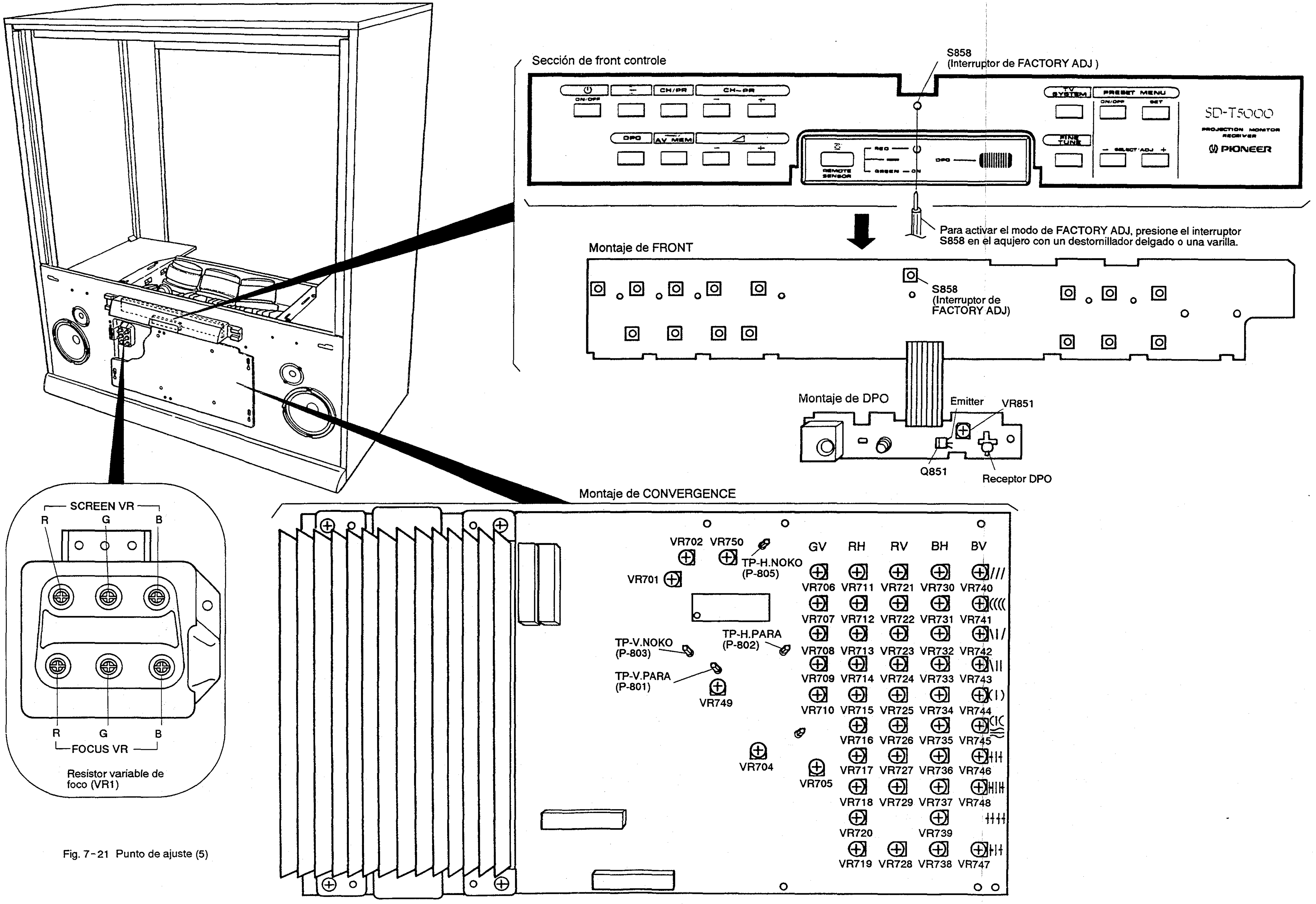

Papel de dibujo, etc.
Espaciador
Espaciador
Gabinete
(vista desde arriba)
Almohadilla
7mm
Espaciador
Papel de dibujo, etc.
Montaje de lente 50 (R)
Montaje de lente 50 (G)
Montaje de lente 50 (B)

Fig. 7-20 Punto de ajuste (4)


Sección de front controle
S858
(Interruptor de FACTORY ADJ )
ON/OFF
CH/PR
CH←PR
DPO
AV MEM
REMOTE SENSOR
RED
GREEN — ON
DPO
TV SYSTEM
PRESET MENU
ON/OFF
SET
FINE TUNE
SELECT ADJ
SD-T5000
PROJECTION MONITOR RECEIVER
PIONEER
Montaje de FRONT
S858
(Interruptor de FACTORY ADJ)
Montaje de DPO
Emitter
VR851
Q851
Receptor DPO
SCREEN VR
R
G
B
R
G
B
FOCUS VR
Montaje de CONVERGENCE
VR702
VR750
TP-H.NOKO
(P-805)
VR701
GV
RH
RV
BH
BV
VR706
VR711
VR721
VR730
VR740
VR707
VR712
VR722
VR731
VR741
TP-H.PARA
(P-802)
TP-V.NOKO
(P-803)
VR708
VR713
VR723
VR732
VR742
TP-V.PARA
(P-801)
VR709
VR714
VR724
VR733
VR743
VR749
VR710
VR715
VR725
VR734
VR744
VR716
VR726
VR735
VR745
VR704
VR717
VR727
VR736
VR746
VR705
VR718
VR729
VR737
VR748
VR720
VR739
VR719
VR728
VR738
VR747

Para activar el modo de FACTORY ADJ, presione el interruptor S858 en el aqujero con un destornillador delgado o una varilla.

Resistor variable de foco (VR1)

Fig. 7-21 Punto de ajuste (5)

# 8. REPLACING THE CRT ASSEMBLY

**Serviceman Warning**

When replacing the CRT assembly, turn off the power, unplug the AC plug and let the unit discharge for more than 1 minute.

The anode cables of the CRT assembly R, G, and B in PROJECTION MONITOR RECEIVER are connected in series as shown in Fig. 8-1.

When replacing the CRT assembly, the anode cable have to be cut.

Note: Since the anode cables for the CRT assembly to service supplies are only available in half lengths, either cut longer lengths, or join older lengths of cable to ensure that the original cable length is used.

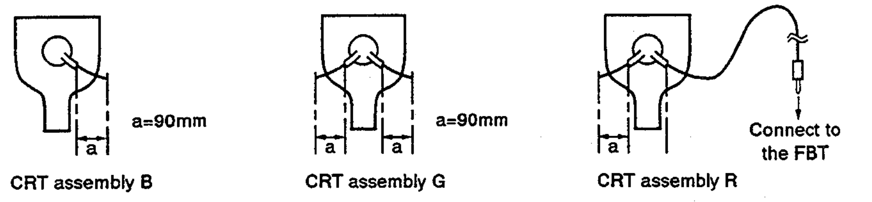
Table 8-1 Cable disconnecting methods

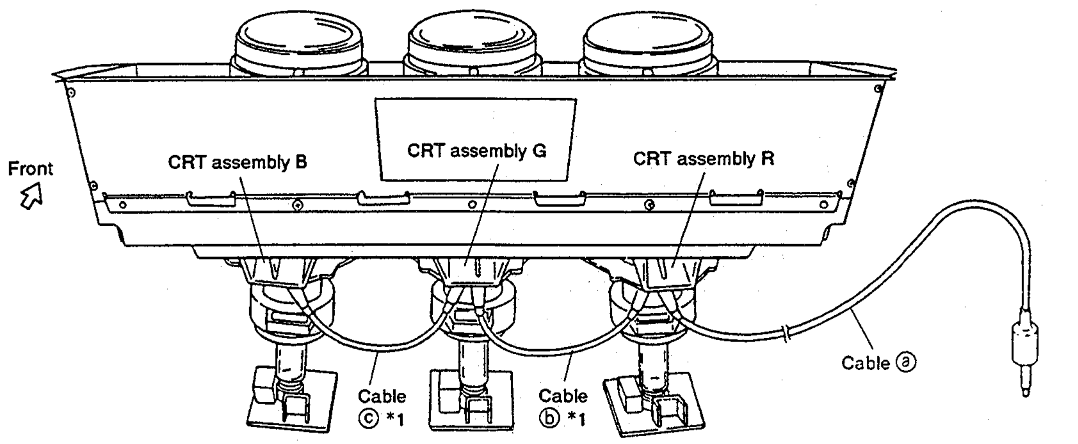
| Cable | Replacement CRT assembly | | |
|---|---|---|---|
| | When CRT assembly B is replaced | When CRT assembly G is replaced | When CRT assembly R is replaced |
| Cable ⓐ | —— | —— | Disconnect the anode cable from the FBT. (Refer to "Fig.7 - 16 Disconnecting the anode cable".) |
| Cable ⓑ | Leave it as is | Cut a place 20mm from the exact center towards the CRT assembly G | Cut a place 20mm from the exact center towards the CRT assembly R |
| Cable ⓒ | Cut a place 20mm from the exact center towards the CRT assembly B | Cut a place 20mm from the exact center towards the CRT assembly G | Leave it as is |

Note: Do not cut other cables by mistake.

## 8.1 WHEN REPLACING THE CRT ASSEMBLY

Each CRT assembly supplied as a spare part is as shown below.


a=90mm
a
CRT assembly B
a=90mm
a
a
CRT assembly G
a
Connect to the FBT
CRT assembly R


Front
CRT assembly B
CRT assembly G
CRT assembly R
Cable ⓐ
Cable ⓒ *1
Cable ⓑ *1

*1: Length of cable ⓒ and ⓑ is 180mm.

Fig. 8-1 Connection diagram of the each CRT assemblies

## 8.2 ANODE CABLE SHEATH PEELING

- Peel the sheath of the end of cut anode cable and new anode cable.
- The anode cable structure is outlined in Fig. 8-2. Note that the sheath consists of two layers.
- The method used to peel the sheath back is illustrated in Fig. 8-3. Use a cutter knife, taking care not to damage the core leads.

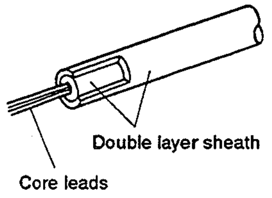

Double layer sheath
Core leads

Fig. 8-2 Anode cable structure

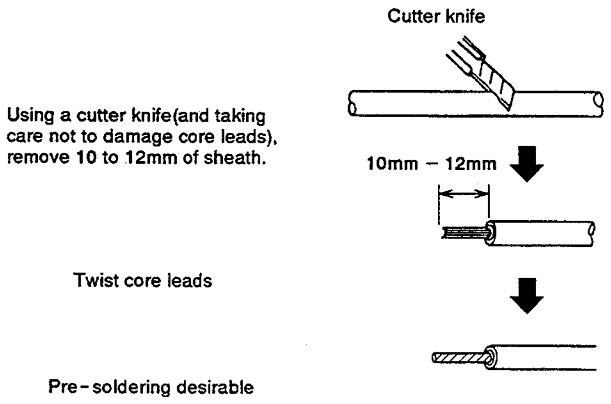
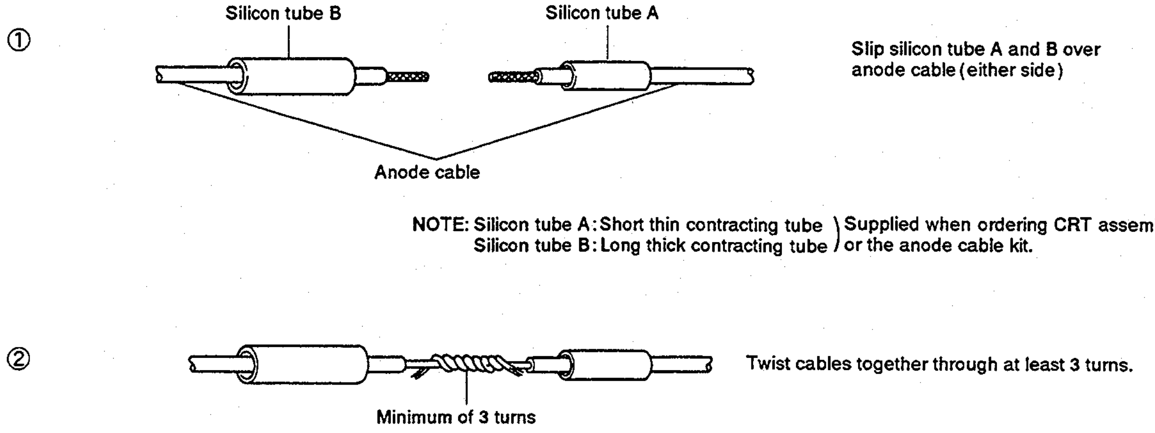

Cutter knife
Using a cutter knife(and taking care not to damage core leads), remove 10 to 12mm of sheath.
10mm – 12mm
Twist core leads
Pre-soldering desirable

Fig. 8-3 Anode cable sheath peeling

## 8.3 ANODE CABLE JOINING PROCEDURE

- Join the cut anode cable and the new anode cable to restore as shown in Fig. 8-1. Also, when replacing the FBT, refer to section 7.27 "Anode voltage measuring method".
- Slip two silicon tubes (silicon tubes A and B in Fig. 8-4) over the anode cables before making the join.
- The silicon adhesive is applied to guard the cable core leads from external air. Apply binder liberally. After completing the joint (at step ⑩ in Fig. 8-4-1 thru 3), check that there is no hole in the silicon binder and the tube interior cannot be seen.
- Leave the silicon adhesive to harden overnight.

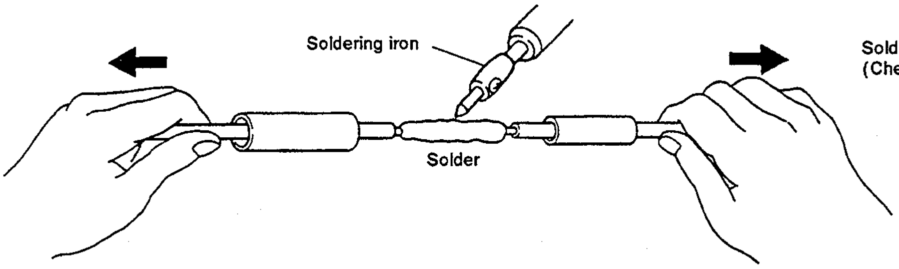
CAUTION: For the silicon adhesive, be sure to use silicon adhesive part no. GYL-017.


①
Silicon tube B
Silicon tube A
Slip silicon tube A and B over anode cable (either side)
Anode cable
②
Twist cables together through at least 3 turns.
Minimum of 3 turns

NOTE: Silicon tube A: Short thin contracting tube
Silicon tube B: Long thick contracting tube
} Supplied when ordering CRT assembly or the anode cable kit.

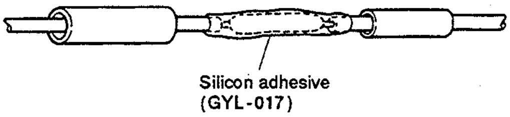
Fig. 8-4-1 Anode cable joining procedure (1)

③


Soldering iron
Solder

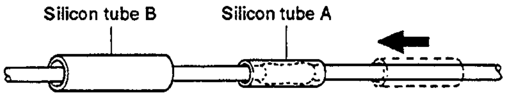
Solder the joint, and pull at both ends.
(Check against faulty soldering.)

④


Silicon adhesive
(GYL-017)

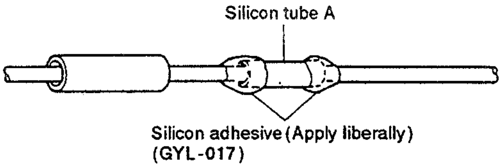
Apply silicon adhesive liberally.
(Cover the entire soldered section and remaining bare core leads.)

⑤


Silicon tube B
Silicon tube A

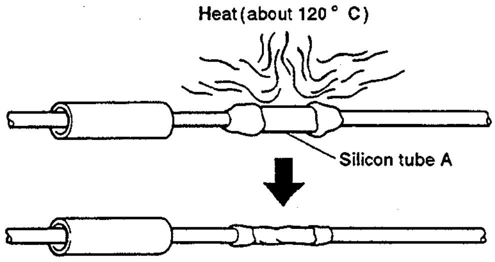
Cover the silicon adhesive section with silicon tube A.
(With the center of the silicon tube A corresponding to the solder section)

⑥


Silicon tube A
Silicon adhesive (Apply liberally)
(GYL-017)

Apply liberal amounts of silicon adhesive to both ends of silicon tube A

⑦

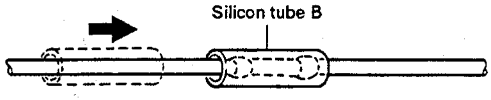

Heat (about 120 ° C)
Silicon tube A

Apply heat (about 120 ° C) to contract silicon tube A.

Note: Use an industrial drier or soldering iron as the heat source.

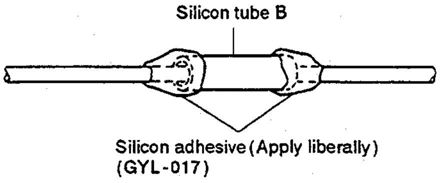
Check that the silicon adhesive has been applied evenly without air pockets etc. If there are any pockets etc, apply additional silicon adhesive.

⑧


Silicon tube B

Slip silicon tube B over silicon tube A.
(With the center of silicon tube B also corresponding to the solder section)

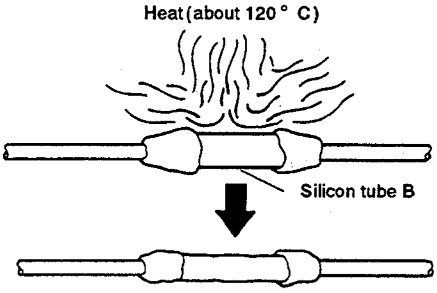
⑨


Silicon tube B
Silicon adhesive (Apply liberally)
(GYL-017)

Apply liberal amounts of silicon adhesive to both ends of silicon tube B.

Fig. 8-4-2 Anode cable joining procedure (2)

⑩

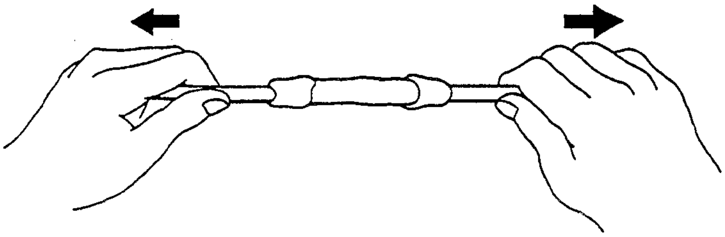


Apply heat (about 120° C) to contract silicon tube B.

Note: Use an industrial drier or soldering iron as the heat source.

Check that the silicon adhesive has been applied evenly without air pockets etc. If there are any pockets etc, apply additional silicon adhesive.

⑪



Gently tug both ends to check that the cables do not separate.

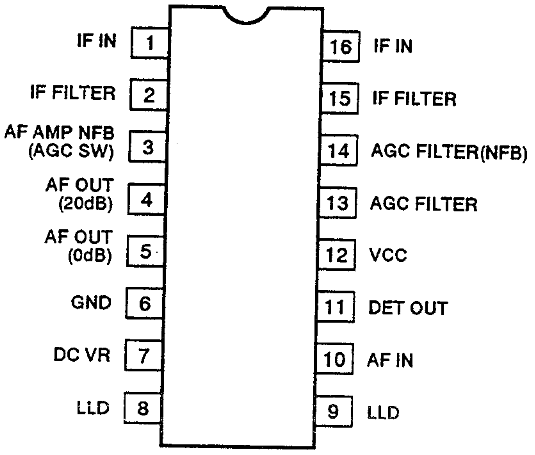
Fig. 8-4-3 Anode cable joining procedure (3)

# 9. IC INFORMATION

## ■ LA7710

- Function : IF amplifier, detection, IF AGC, electric VR, AF driver and PAL/SECAM turnover switch
- Usage : For processing the PAL/SECAM audio IF signal of the VTR and television.

### • Pin Arrangement

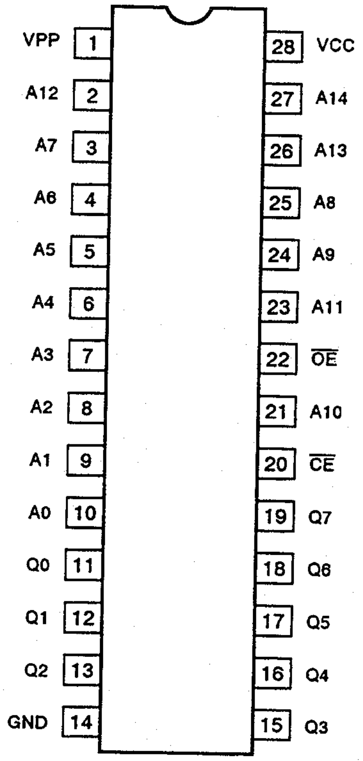

IF IN 1
IF FILTER 2
AF AMP NFB (AGC SW) 3
AF OUT (20dB) 4
AF OUT (0dB) 5
GND 6
DC VR 7
LLD 8
16 IF IN
15 IF FILTER
14 AGC FILTER(NFB)
13 AGC FILTER
12 VCC
11 DET OUT
10 AF IN
9 LLD

(Top view)

## ■ PDN001A9

256k bit EPROM

### • Pin Arrangement


VPP 1
A12 2
A7 3
A6 4
A5 5
A4 6
A3 7
A2 8
A1 9
A0 10
Q0 11
Q1 12
Q2 13
GND 14
28 VCC
27 A14
26 A13
25 A8
24 A9
23 A11
22 $\overline{OE}$
21 A10
20 $\overline{CE}$
19 Q7
18 Q6
17 Q5
16 Q4
15 Q3

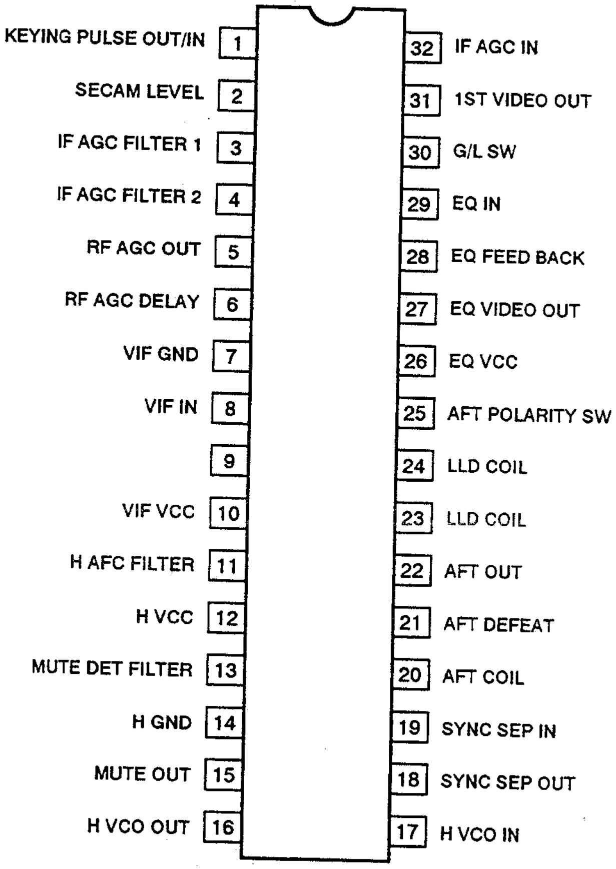
(Top view)

| Pin Name | Pin Function |
|---|---|
| A0–A14 | Address inputs |
| $\overline{CE}$ | Chip enable/power down |
| $\overline{OE}$ | Output enable |
| GND | Ground |
| Q0–Q7 | Outputs |

## ■ M51419ASP

MULTI VIF

### • Pin Arrangement

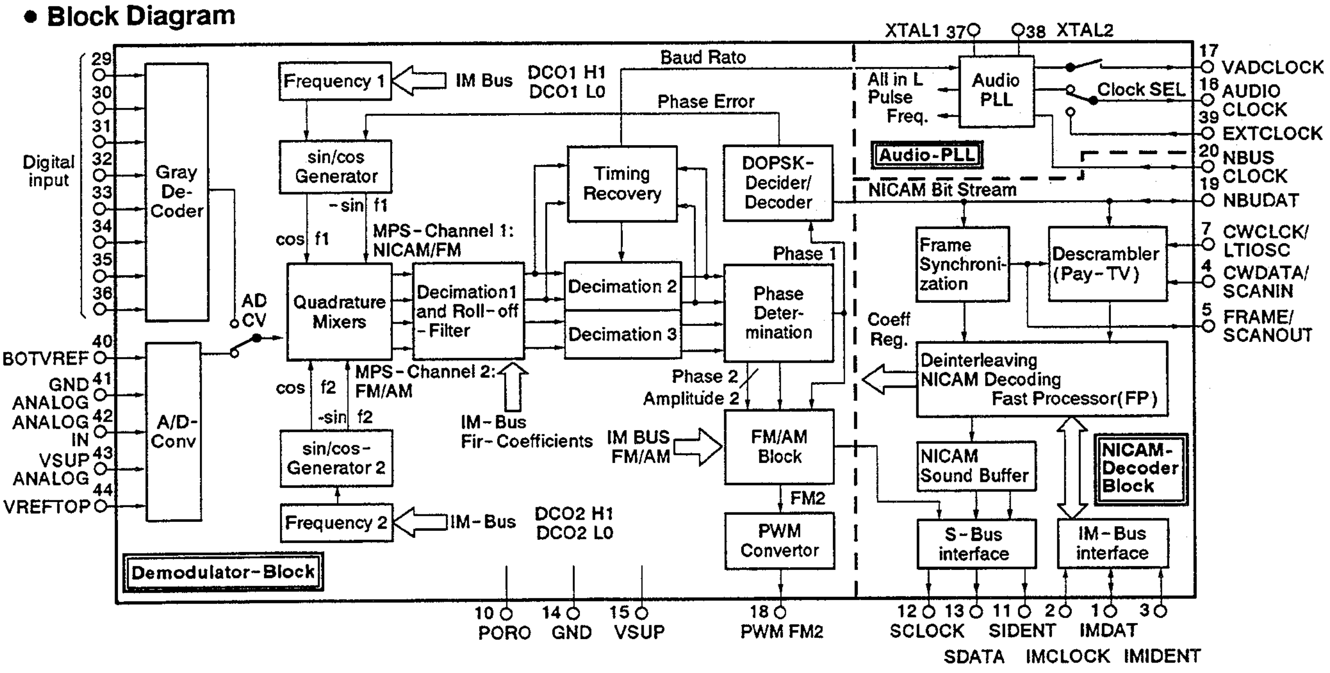

KEYING PULSE OUT/IN 1
SECAM LEVEL 2
IF AGC FILTER 1 3
IF AGC FILTER 2 4
RF AGC OUT 5
RF AGC DELAY 6
VIF GND 7
VIF IN 8
9
VIF VCC 10
H AFC FILTER 11
H VCC 12
MUTE DET FILTER 13
H GND 14
MUTE OUT 15
H VCO OUT 16
32 IF AGC IN
31 1ST VIDEO OUT
30 G/L SW
29 EQ IN
28 EQ FEED BACK
27 EQ VIDEO OUT
26 EQ VCC
25 AFT POLARITY SW
24 LLD COIL
23 LLD COIL
22 AFT OUT
21 AFT DEFEAT
20 AFT COIL
19 SYNC SEP IN
18 SYNC SEP OUT
17 H VCO IN

(Top view)

## MSP2400

FM demodulator / NICAM decoder

### • Block Diagram


XTAL1 37
38 XTAL2
Digital input
29
30
31
32
33
34
35
36
Gray De-Coder
40 BOTVREF
41 GND ANALOG
42 ANALOG IN
43 VSUP ANALOG
44 VREFTOP
A/D-Conv
AD CV
Frequency 1
IM Bus
DCO1 H1
DCO1 L0
sin/cos Generator
cos f1
-sin f1
MPS-Channel 1: NICAM/FM
Quadrature Mixers
Decimation1 and Roll-off -Filter
MPS-Channel 2: FM/AM
cos f2
-sin f2
sin/cos-Generator 2
Frequency 2
IM-Bus
DCO2 H1
DCO2 L0
IM-Bus Fir-Coefficients
Demodulator-Block
Baud Rato
Phase Error
Timing Recovery
DOPSK-Decider/ Decoder
Decimation 2
Decimation 3
Phase 1
Phase Deter-mination
Phase 2
Amplitude 2
IM BUS FM/AM
FM/AM Block
FM2
PWM Convertor
All in L Pulse Freq.
Audio PLL
Audio-PLL
Clock SEL
NICAM Bit Stream
Coeff Reg.
Frame Synchroni-zation
Descrambler (Pay-TV)
Deinterleaving NICAM Decoding Fast Processor(FP)
NICAM Sound Buffer
NICAM-Decoder Block
S-Bus interface
IM-Bus interface
17 VADCLOCK
18 AUDIO CLOCK
39 EXTCLOCK
20 NBUS CLOCK
19 NBUDAT
7 CWCLCK/ LTIOSC
4 CWDATA/ SCANIN
5 FRAME/ SCANOUT
10 PORO
14 GND
15 VSUP
18 PWM FM2
12 SCLOCK
13 SDATA
11 SIDENT
2 IMCLOCK
1 IMDAT
3 IMIDENT

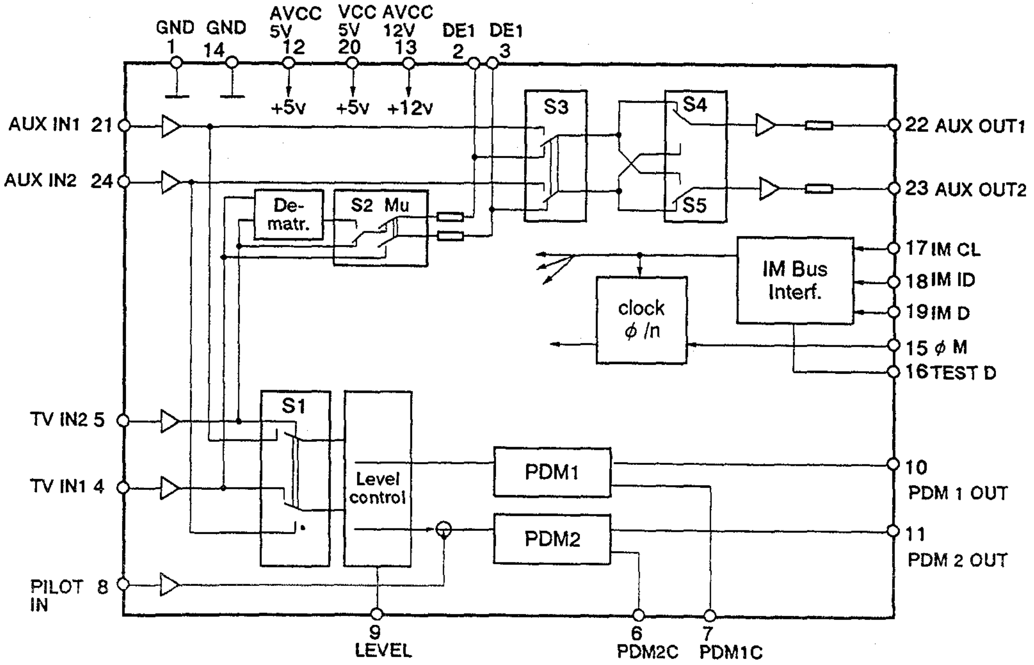
### • Pin Function

| No. | Pin Name | Function | No. | Pin Name | Function |
|---|---|---|---|---|---|
| 1 | IMDAT | IM-BUS DATA input / output | 23 | DIGOUT2 | Dig. output (Test, not used. to GND) |
| 2 | IMCLOCK | IM-BUS Clock input | 24 | DIGOUT3 | Dig. output (Test, not used. to GND) |
| 3 | IMIDENT | IM-BUS Ident input | 25 | DIGOUT4 | Dig. output (Test, not used. to GND) |
| 4 | CWDATA/SCANIN | Pay TV data / test input (Not used. to GND) | 26 | DIGOUT5 | Dig. output (Test, not used. to GND) |
| 5 | FRAME/SCAN OUT | Frame 1kHz input / test output (Not used. to open) | 27 | DIGOUT6 | Dig. output (Test, not used. to GND) |
| 6 | IOTEST | For test only (Not used. to GND) | 28 | DIGOUT7 | Dig. output MSB (Test, not used. to GND) |
| 7 | CWCLOCK/LTIOSC | Pay TV clock / test input (Not used. to GND) | 29 | DIGIN7 | Dig. intput MSB (from ext. ADC. not used. to |
| 8 | ROMTEST | For test only (Not used. to GND) | 30 | DIGIN6 | Dig. intput (from ext. ADC. not used. to GND) |
| 9 | RDSOUT | For test only (Not used. to open) | 31 | DIGIN5 | Dig. intput (from ext. ADC. not used. to GND) |
| 10 | PORQ | Power on reset (active low) | 32 | DIGIN4 | Dig. intput (from ext. ADC. not used. to GND) |
| 11 | SIDENT | S-bus ident | 33 | DIGIN3 | Dig. intput (from ext. ADC. not used. to GND) |
| 12 | SCLOCK | S-bus clock | 34 | DIGIN2 | Dig. intput (from ext. ADC. not used. to GND) |
| 13 | SDATA | S-bus data | 35 | DIGIN1 | Dig. intput (from ext. ADC. not used. to GND) |
| 14 | GND | Ground (digital) | 36 | DIGIN0 | Dig. intput LSB (from ext. ADC. not used. to GND) |
| 15 | VSUP | Supply voltage (digital) | 37 | XTAL1 | Crystal (18.432MHz) |
| 16 | AUDIO CLOCK | Main clock for AMU, APU, ADC or ACP | 38 | XTAL2 | Crystal (18.432MHz) |
| 17 | VAD CLOCK | Clock for external A/D converter (Not used. to open) | 39 | EXTCLOCK | Input for external clock (D2MAC) to be passed through MSP. |
| 18 | PWMFM2 | FM2 channel for FM-identification ; to be connected to pin 8 via bandpass of ADC2311E or pin 19 of ACP. if bit 7 of MODE REG=0 then PWM FM2=0 (Hi impedance) | 40 | BOTVREF | ADC :Bottom reference voltage (0V) |
| 19 | NBUDAT | NICAM728 serial I/O (Not used. to open) | 41 | GND ANALOG | ADC ground |
| 20 | NBUSCLOCK | Clock of digital NICAM bit stream (Not used. to open) | 42 | ANLOGIN | ADC :Analog input (sound IF only no video) |
| 21 | DIGOUT0 | Dig. output LSB (Test, not used. to GND) | 43 | VSUPANALOG | ADC :supply voltage (5V) |
| 22 | DIGOUT1 | Dig. output (Test, not used. to GND) | 44 | VREFTOP | ADC :Top reference voltage (approx. 2.4V) |

## ■ ADC2301E

AUDIO A/D converter

### • Block Diagram


GND 1
GND 14
AVCC 5V 12
VCC 5V 20
AVCC 12V 13
DE1 2
DE1 3
+5v
+5v
+12v
AUX IN1 21
AUX IN2 24
S3
S4
S5
De-matr.
S2 Mu
22 AUX OUT1
23 AUX OUT2
17 IM CL
18 IM ID
19 IM D
15 ϕ M
16 TEST D
IM Bus Interf.
clock ϕ /n
TV IN2 5
TV IN1 4
PILOT IN 8
S1
Level control
PDM1
PDM2
10 PDM 1 OUT
11 PDM 2 OUT
9 LEVEL
6 PDM2C
7 PDM1C

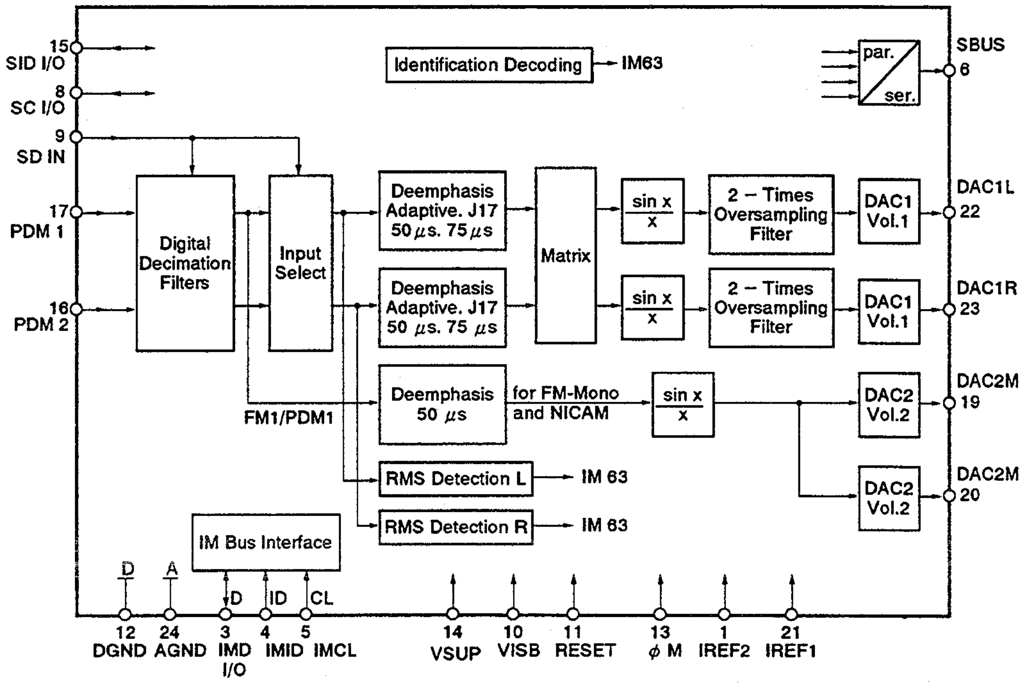
### • Pin Function

| No. | Pin Name | Function | No. | Pin Name | Function |
|---|---|---|---|---|---|
| 1 | GND | Ground | 13 | AVcc 12V | Vsup2 +12V supply voltage (analog) |
| 2 | DE1 | Deemphasis DE1 (Not used). | 14 | GND | Ground |
| 3 | DE1 | Deemphasis DE1 (Not used.) | 15 | ϕ M | ϕ M Main clock input |
| 4 | TV IN2 | TV in 2 analog input (Not used). | 16 | TEST D | Test data output (Not used). |
| 5 | TV IN1 | TV in 1 analog input (Not used). | 17 | IMCL | IM Bus clock input |
| 6 | PDM2C | PDMII capacitor C2 | 18 | IMID | IM Bus ident input |
| 7 | PDM1C | PDMI capacitor C1 (Not used). | 19 | IMD | IM Bus data input |
| 8 | PILOT IN | Pilot in analog input | 20 | Vcc 5V | Vsup1 +5V supply voltage |
| 9 | LEVEL | Level control, RC pin | 21 | AUX IN1 | AUX in 1 analog input (Not used). |
| 10 | PDM1OUT | PDM 1 digital output (Not used). | 22 | AUX OUT1 | AUX out 1 analog output (Not used). |
| 11 | PDM2OUT | PDM 2 digital output | 23 | AUX OUT2 | AUX out 2 analog output (Not used). |
| 12 | AVcc 5V | Vsup1 +5V supply voltage (analog) | 24 | AUX IN2 | AUX in 2 analog input (Not used). |

## ■ AMU2481VS

Digital realtime audio mixer

### • Block Diagram


15 SID I/O
8 SC I/O
9 SD IN
17 PDM 1
16 PDM 2
Identification Decoding
IM63
par./ser.
SBUS 6
Digital Decimation Filters
Input Select
Deemphasis Adaptive. J17 50µs. 75µs
Deemphasis Adaptive. J17 50 µs. 75 µs
Matrix
sin x / x
2 – Times Oversampling Filter
DAC1 Vol.1
DAC1L 22
DAC1R 23
Deemphasis 50 µs
for FM-Mono and NICAM
FM1/PDM1
DAC2 Vol.2
DAC2M 19
DAC2M 20
RMS Detection L
RMS Detection R
IM 63
IM Bus Interface
D
A
ID
CL
12 DGND
24 AGND
3 IMD I/O
4 IMID
5 IMCL
14 VSUP
10 VISB
11 RESET
13 ϕ M
1 IREF2
21 IREF1

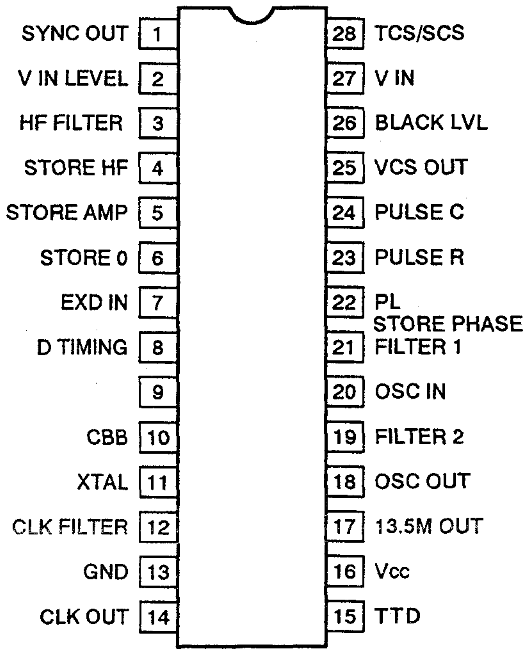
### • Pin Function

| No. | Pin Name | Function | No. | Pin Name | Function |
|---|---|---|---|---|---|
| 1 | IREF2 | IREF2 Reference current input (for DAC 2) | 13 | ϕ M | ϕ M clock input |
| 2 | L.V | Leave vacant (Not used). | 14 | VSUP | VSUP |
| 3 | IMD I/O | IM Bus data input/output | 15 | SID I/O | S-ident input/output |
| 4 | IMID | IM Bus ident input | 16 | PDM2 | PDM2 digital input (R) |
| 5 | IMCL | IM Bus clock input | 17 | PDM1 | PDM1 digital input (L) |
| 6 | SBUS | S-data output (Not used). | 18 | L.V | Leave vacant (Not used). |
| 7 | L.V | Leave vacant (Not used). | 19 | DAC2M | DAC2M output (Not used). |
| 8 | SC I/O | S-clock input/output | 20 | DAC2M | DAC2M output (Not used). |
| 9 | SD IN | S-data input | 21 | IREF1 | IREF1 Reference current input (for DAC 1) |
| 10 | VISB | VISB internal substrate bias voltage | 22 | DAC1L | DAC1L output |
| 11 | RESET | $\overline{\text{Reset}}$ input | 23 | DAC1R | DAC1R output |
| 12 | DGND | Ground (digital) | 24 | AGND | Ground (analog) |

## SAA5191

Teletext video processor

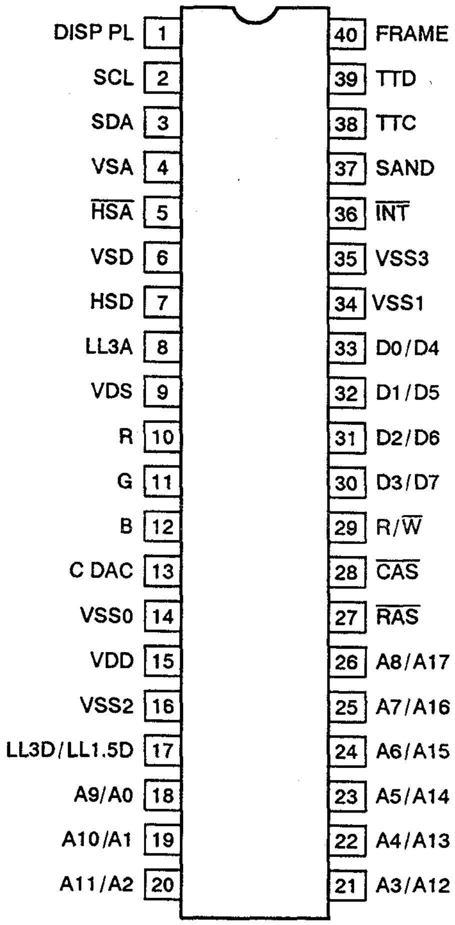
### • Pin Arrangement


SYNC OUT 1
V IN LEVEL 2
HF FILTER 3
STORE HF 4
STORE AMP 5
STORE 0 6
EXD IN 7
D TIMING 8
9
CBB 10
XTAL 11
CLK FILTER 12
GND 13
CLK OUT 14
28 TCS/SCS
27 V IN
26 BLACK LVL
25 VCS OUT
24 PULSE C
23 PULSE R
22 PL
STORE PHASE
21 FILTER 1
20 OSC IN
19 FILTER 2
18 OSC OUT
17 13.5M OUT
16 Vcc
15 TTD

(Top view)

## SAA9042P/A

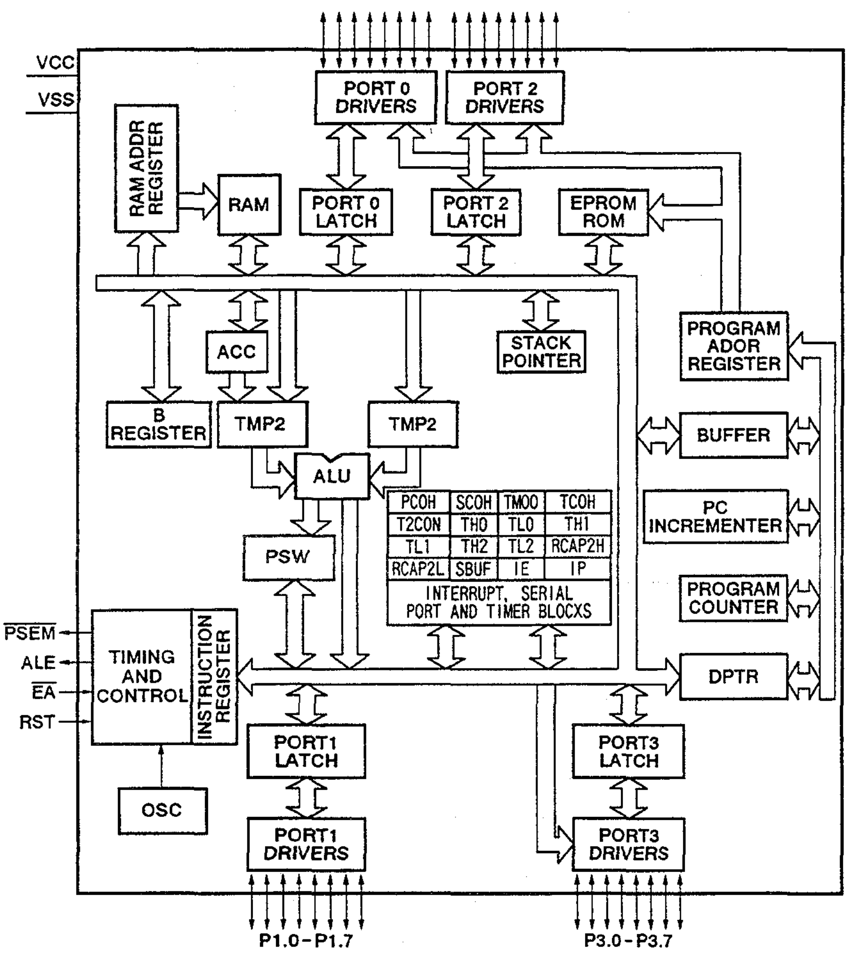
### • Pin Arrangement


DISP PL 1
SCL 2
SDA 3
VSA 4
$\overline{HSA}$ 5
VSD 6
HSD 7
LL3A 8
VDS 9
R 10
G 11
B 12
C DAC 13
VSS0 14
VDD 15
VSS2 16
LL3D/LL1.5D 17
A9/A0 18
A10/A1 19
A11/A2 20
40 FRAME
39 TTD
38 TTC
37 SAND
36 $\overline{INT}$
35 VSS3
34 VSS1
33 D0/D4
32 D1/D5
31 D2/D6
30 D3/D7
29 R/$\overline{W}$
28 $\overline{CAS}$
27 $\overline{RAS}$
26 A8/A17
25 A7/A16
24 A6/A15
23 A5/A14
22 A4/A13
21 A3/A12

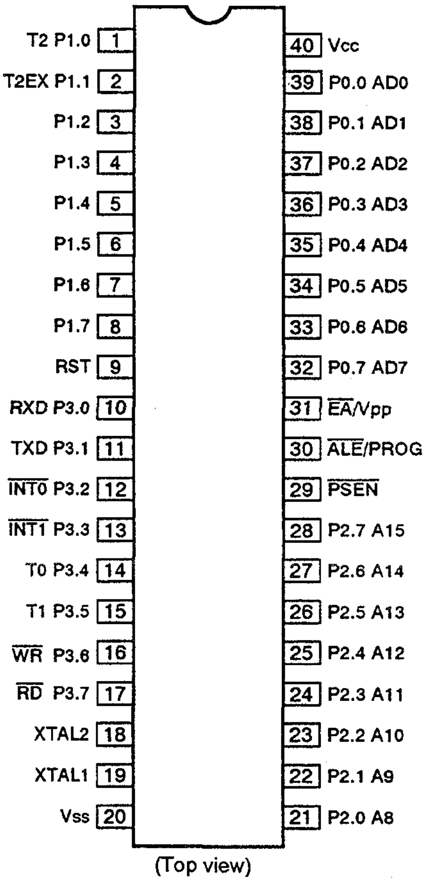
(Top view)

## ■ P8032AH

### • Block Diagram


P0.0 - P0.7
P2.0 - P2.7
VCC
VSS
RAM ADDR REGISTER
RAM
PORT 0 DRIVERS
PORT 2 DRIVERS
PORT 0 LATCH
PORT 2 LATCH
EPROM ROM
ACC
STACK POINTER
PROGRAM ADDR REGISTER
B REGISTER
TMP2
TMP2
BUFFER
ALU
PCOH
SCOH
TMOO
TCOH
T2CON
THO
TLO
TH1
TL1
TH2
TL2
RCAP2H
RCAP2L
SBUF
IE
IP
INTERRUPT, SERIAL PORT AND TIMER BLOCXS
PC INCREMENTER
PSW
PROGRAM COUNTER
PSEM
ALE
EA
RST
TIMING AND CONTROL
INSTRUCTION REGISTER
DPTR
PORT1 LATCH
PORT3 LATCH
OSC
PORT1 DRIVERS
PORT3 DRIVERS
P1.0 - P1.7
P3.0 - P3.7

### • Pin Arrangement


T2 P1.0 1
T2EX P1.1 2
P1.2 3
P1.3 4
P1.4 5
P1.5 6
P1.6 7
P1.7 8
RST 9
RXD P3.0 10
TXD P3.1 11
INT0 P3.2 12
INT1 P3.3 13
T0 P3.4 14
T1 P3.5 15
WR P3.6 16
RD P3.7 17
XTAL2 18
XTAL1 19
Vss 20
40 Vcc
39 P0.0 AD0
38 P0.1 AD1
37 P0.2 AD2
36 P0.3 AD3
35 P0.4 AD4
34 P0.5 AD5
33 P0.6 AD6
32 P0.7 AD7
31 EA/Vpp
30 ALE/PROG
29 PSEN
28 P2.7 A15
27 P2.6 A14
26 P2.5 A13
25 P2.4 A12
24 P2.3 A11
23 P2.2 A10
22 P2.1 A9
21 P2.0 A8

(Top view)

## PD5173A9

Control microcomputer

### ● Pin Function

Note ) I : CMOS input O : CMOS output N : N ch open dolein output

| No. | Pin Name | I/O | Function | Active |
|---|---|---|---|---|
| 1 | OSC1 | I | Clock input/output for display. | |
| 2 | OSC2 | O | | |
| 3 | KEY | I | Main unit key scan signal input. Decipher the format signal of IC851 (PD5136) in the FRONT assembly. | |
| 4 | DPO | I | Analog voltage input for DPO control. (16 stages) | |
| 5 | REM IN | I | Remote control signal input. Decipher the SR format signal. | |
| 6 | VOLUME | O | PWM output for volume level control. | H |
| 7 | COLOR | N | PWM output for color level control. | H |
| 8 | TINT | N | PWM output for tint level control. | H |
| 9 | CONTR | N | PWM output for contrast level control. | H |
| 10 | BRIGHT | N | PWM output for brightness level control. | H |
| 11 | SHARP | N | PWM output for sharpness level control. | H |
| 12 | VNR | N | VNR (ON/OFF) output. | H |
| 13 | Y/C SW | N | Video mode output NORMAL → L , S-VIDEO → H | |
| 14 | TONE/CONV | N | PWM output for convergence and sound quality level control. | H |
| 15 | HS | I | Horizontal sync. count input for receiving the tuner. H-SYNC is counted with the cycle of 1 msec, and when the 12 to 18 state is counted amount to 8, the system decides that a station exists, and when the other state is counted amount to 6, the system decides that a station not exists. | |
| 16 | AC CLK | I | AC clock detection input. Use for detecting the AC power OFF. (Reset is generated when no AC clock is supplied for 100 msec.) | |
| 17 | A MUTE | O | Audio mute output. when selecting MUTE mode, switching input and turning power ON/OFF, AUDIO MUTE is output. | H |
| 18 | TXT BLK | I | Not used. | |
| 19 | RGB SW | N | Switching input of RGB input signal .<br>H:Connect to the external RGB side , L:Connect to the TELETEXT side | |
| 20 | CE | N | At the chip enable of PD0012A serial transfer, set to H.<br>● Function of PD0012A | H |

① TV SYSTEM output

| Pin of PD0012A<br>System | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 |
|---|---|---|---|---|---|
| B / G | L | H | H | L | L |
| D / K | L | H | L | H | L |
| L | L | H | L | H | H |
| L' | H | H | L | H | H |
| I | L | H | L | L | L |
| M | L | L | H | L | L |

② COLOR SYSTEM output ( Manual mode output )

| Pin of PD0012A<br>System | Pin 10 | Pin 11 | Pin 12 |
|---|---|---|---|
| PAL | H | H | H |
| SECAM | H | L | H |
| NTSC | L | L | H |
| NTSC 4.43 | L | H | H |

| Pin of PD0012A<br>Trap | Pin 13 | Pin 14 |
|---|---|---|
| PAL | H | L |
| SECAM | L | H |
| NTSC | H | H |
| NTSC 4.43 | H | L |

<table>
<tr><th>No.</th><th>Pin Name</th><th>I/O</th><th colspan="2">Function</th><th>Active</th></tr>
<tr><td>20</td><td>CE</td><td>N</td><td colspan="2">② COLOR SYSTEM output ( Auto mode output)
<table>
<tr><th>Pin of PD0012A<br>System</th><th>Pin 10</th><th>Pin 11</th><th>Pin 12</th></tr>
<tr><td>PAL</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>SECAM</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>NTSC</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>NTSC 4.43</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>B / W</td><td>L</td><td>L</td><td>L</td></tr>
</table>
<table>
<tr><th>Pin of PD0012A<br>Trap</th><th>Pin 13</th><th>Pin 14</th></tr>
<tr><td>PAL</td><td>H</td><td>L</td></tr>
<tr><td>SECAM</td><td>L</td><td>H</td></tr>
<tr><td>NTSC</td><td>H</td><td>H</td></tr>
<tr><td>NTSC 4.43</td><td>H</td><td>L</td></tr>
<tr><td>B / W</td><td>L</td><td>L</td></tr>
</table>
Note:<br>For judgment, refer to pin 47 and pin 48 .</td><td></td></tr>
<tr><td>21</td><td>SCL</td><td>N</td><td>I²C serial transmission clock.</td><td rowspan="2">Use for the TEXT and EEPROM.</td><td></td></tr>
<tr><td>22</td><td>SDA</td><td>I/N</td><td>I²C serial data input/output.</td><td></td></tr>
<tr><td>23</td><td>IDENT</td><td>N</td><td colspan="2">Ident for IM bus transmission. Use for control the NICAM decoder.</td><td></td></tr>
<tr><td>24</td><td>SIN</td><td>I</td><td>Serial data input.</td><td rowspan="3">Use for PLL EXP IC (PD0012A) and IM bus.</td><td></td></tr>
<tr><td>25</td><td>CLK</td><td>N</td><td>Serial clock.</td><td></td></tr>
<tr><td>26</td><td>SOUT</td><td>N</td><td>Serial data output.</td><td></td></tr>
<tr><td>27</td><td>CNVSS</td><td></td><td colspan="2">Connect to VSS.</td><td></td></tr>
<tr><td>28</td><td>NC</td><td>O</td><td colspan="2">Timing output . (Not used.)</td><td></td></tr>
<tr><td>29</td><td>RESET</td><td>I</td><td colspan="2">System reset. Reset is done by applying L for more than 0.95 μsec (when OSC=4.19MHz).</td><td>L</td></tr>
<tr><td>30</td><td>XIN</td><td>I</td><td colspan="2" rowspan="2">Input/output terminal of the main clock generating circuit.<br>Connect the ceramic resonator of 4.19MHz.</td><td></td></tr>
<tr><td>31</td><td>XOUT</td><td>O</td><td></td></tr>
<tr><td>32</td><td>VSS</td><td></td><td colspan="2">GND.</td><td></td></tr>
<tr><td>33</td><td>4051C</td><td>O</td><td colspan="2" rowspan="3">A, B and C terminal output of the multiplexer IC (MC14051BCP) . For convergence, sound quality and switching PWM.
<table>
<tr><th>Pin<br>Control</th><th>Pin 33</th><th>Pin 34</th><th>Pin 35</th></tr>
<tr><td>CLOSE</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>CONV.B-V</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>CONV.B-H</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>CONV.R-V</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>CONV.R-H</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>BALANCE</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>TREBLE</td><td>H</td><td>H</td><td>L</td></tr>
<tr><td>BASS</td><td>H</td><td>H</td><td>H</td></tr>
</table></td><td></td></tr>
<tr><td>34</td><td>4051B</td><td>O</td><td></td></tr>
<tr><td>35</td><td>4051A</td><td>O</td><td></td></tr>
<tr><td>36</td><td>S RST</td><td>O</td><td colspan="2">System reset output. H at approx. 4 sec after the power is ON, and L at the POWER is OFF.<br>Used for separating the TELETEXT bus.</td><td></td></tr>
<tr><td>37</td><td>INP2</td><td>O</td><td colspan="2" rowspan="3">Input switching signal output.
<table>
<tr><th>Pin<br>Function</th><th>Pin 37</th><th>Pin 38</th><th>Pin 39</th></tr>
<tr><td>TUNER</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>AV 1</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>AV 2</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>AV 3</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>AV 4</td><td>H</td><td>*</td><td>*</td></tr>
</table></td><td></td></tr>
<tr><td>38</td><td>INP1</td><td>O</td><td></td></tr>
<tr><td>39</td><td>INP0</td><td>O</td><td></td></tr>
<tr><td>40</td><td>RELAY</td><td>O</td><td colspan="2">Power supply relay control output. ON → L , OFF → H</td><td>L</td></tr>
<tr><td>41</td><td>V MUTE</td><td>I</td><td colspan="2">VIDEO MUTE output and blanking (no signal) detection input. Also used for auto power OFF.</td><td>H</td></tr>
<tr><td>42</td><td>NOT USED</td><td>O</td><td colspan="2">Not used.</td><td></td></tr>
<tr><td>43</td><td>CS<br>(CLOCK)</td><td>I</td><td colspan="2">Color system input. (refer to pin 47 (COL SYS1), pin 48 (COL SYS0).)<br>Lock selection signal of the chroma is hardware set and it correspond to software.<br>L → Lock selection signal of the chroma is locked.<br>H → Lock selection signal of the chroma is not locked.</td><td></td></tr>
<tr><td>44</td><td>Y. MUTE</td><td>O</td><td colspan="2">Y.MUTE</td><td>H</td></tr>
</table>

<table>
<tr><th>No.</th><th>Pin Name</th><th>I/O</th><th>Function</th><th>Active</th></tr>
<tr><td>45</td><td>AV1 SW</td><td>I</td><td>Pin 8 (switching voltage) input of EURO 21 PIN connector.<br>Input signal switch to AV − 1 by edge detection of H → L.<br>Input signal switch to TUNER by edge detection of L → H.</td><td>L ↓<br>H ↑</td></tr>
<tr><td>46</td><td>50 / 60</td><td>I</td><td>Field frequency input. Use for OSD display position. L : 50Hz , H : 60Hz</td><td></td></tr>
<tr><td>47</td><td>COR SYS1</td><td>I</td><td rowspan="2">Color system input. (at the auto mode.)
<table>
<tr><th>Pin<br>System</th><th>Pin 48</th><th>Pin 47</th><th>Pin 43</th></tr>
<tr><td>PAL</td><td>H</td><td>H</td><td>L</td></tr>
<tr><td>SECAM</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>NTSC</td><td>L</td><td>L</td><td>L</td></tr>
<tr><td>NTSC 4.43</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>B / W</td><td>*</td><td>*</td><td>H</td></tr>
</table></td><td></td></tr>
<tr><td>48</td><td>COR SYS0</td><td>I</td><td></td></tr>
<tr><td>49</td><td>STEREO</td><td>I</td><td rowspan="2">Broadcast format deciding input.
<table>
<tr><th>Pin<br>Format</th><th>Pin 49</th><th>Pin 50</th></tr>
<tr><td>STEREO/SAP</td><td>L</td><td>L</td></tr>
<tr><td>MONO/SAP</td><td>H</td><td>L</td></tr>
<tr><td>STEREO</td><td>L</td><td>H</td></tr>
<tr><td>MONO</td><td>H</td><td>H</td></tr>
</table></td><td>L</td></tr>
<tr><td>50</td><td>SAP</td><td>I</td><td>L</td></tr>
<tr><td>51</td><td>MTS1</td><td>O</td><td rowspan="2">MTS mode output.
<table>
<tr><th>Pin<br>MTS mode</th><th>Pin 52</th><th>Pin 51</th></tr>
<tr><td>MAIN/SAP</td><td>L</td><td>L</td></tr>
<tr><td>MAIN</td><td>H</td><td>L</td></tr>
<tr><td>SAP</td><td>L</td><td>H</td></tr>
<tr><td>MONO</td><td>H</td><td>H</td></tr>
</table></td><td>L</td></tr>
<tr><td>52</td><td>MTS0</td><td>O</td><td>L</td></tr>
<tr><td>53</td><td>TV-A</td><td>O</td><td>Audio mute output of TV.</td><td>L</td></tr>
<tr><td>54</td><td>TV-V</td><td>O</td><td>Video mute output of TV.</td><td>H</td></tr>
<tr><td>55</td><td>NOT USED</td><td>O</td><td>Not used.</td><td></td></tr>
<tr><td>56</td><td>ENB</td><td>O</td><td>PLL data enable. Use for output the serial data to PLL.</td><td>H</td></tr>
<tr><td>57</td><td>OUT</td><td>O</td><td rowspan="5">Video output for OSD.</td><td>H</td></tr>
<tr><td>58</td><td>I</td><td>O</td><td>H</td></tr>
<tr><td>59</td><td>B</td><td>O</td><td>H</td></tr>
<tr><td>60</td><td>G</td><td>O</td><td>H</td></tr>
<tr><td>61</td><td>R</td><td>O</td><td>H</td></tr>
<tr><td>62</td><td>VSYNC</td><td>I</td><td rowspan="2">Synchronizing signal input for OSD.</td><td>L</td></tr>
<tr><td>63</td><td>HSYNC</td><td>I</td><td>L</td></tr>
<tr><td>64</td><td>VDD</td><td>I</td><td>Apply +5V power supply.</td><td></td></tr>
</table>

# 10. HOW TO CLEAN

### Jigs

Use the following for cleaning optical components such as lens, mirror and screen.

| Name | Number |
|---|---|
| Cleaning cloth, MINIMAX | GED-009 |
| Cleaning liquid, B4 | GEM1004 |

Note: Wear gloves when holding optical components lest you should make fingerprints.

## 10.1 Method of Cleaning Lenses and Mirrors

1. Remove dust with an airbrush.
2. Apply some cleaning liquid to the cloth and wipe the dirt off with the cloth.
3. If the component is not so dirty, moisten it with breath and wipe it with the cloth.

Note: Wipe it softly lest you should scratch the lens.

## 10.2 Screen Cleaning

1. Apply the cleaning liquid to the above cloth or similar soft cloth and wipe the dirt off with the cloth.
2. Apply de-electrifier to the rear-surface or fresnellens side of the screen, or dust will stick on it.

Note:

(1) Apply no alcoholic liquid such as thinner and benzine to the front surface lest the black printing on the rear surface should come off.

(2) Use Ascetete-cloth tape, GYH1001, for sticking Fresnel lens and lenticular sheet together.

# 11. WIRING DIAGRAM

Reconnect any disconnected lead wires of the Projection monitor receiver.
Figs. 11 - 1 thru 11 - 4 show the important points for connection of the lead wires. You may find that they were connected differently. Be sure reconnect the lead wires as they were.

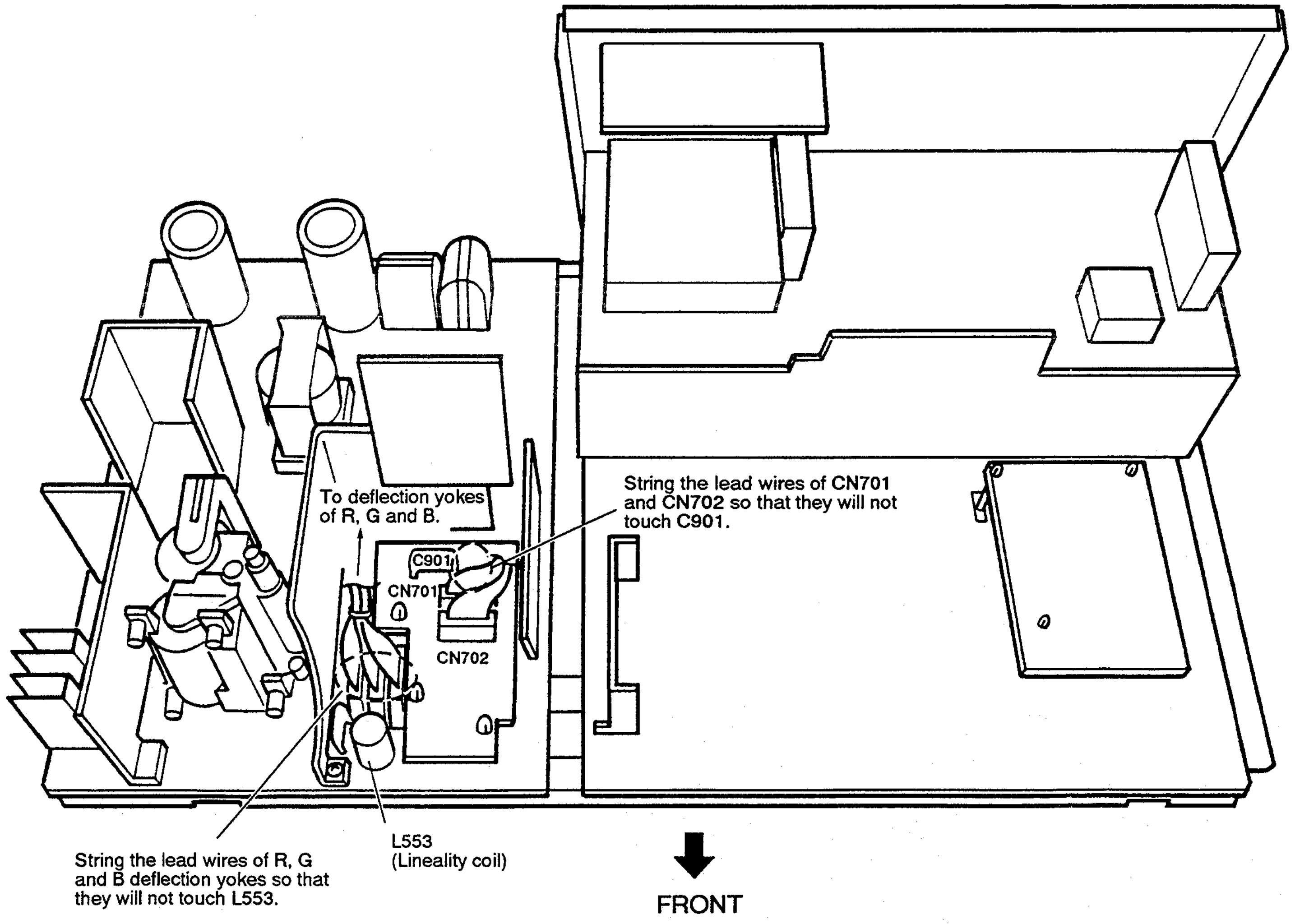

To deflection yokes of R, G and B.
C901
CN701
CN702
String the lead wires of CN701 and CN702 so that they will not touch C901.
String the lead wires of R, G and B deflection yokes so that they will not touch L553.
L553 (Lineality coil)
FRONT

Fig.11 - 1 Wiring diagram of the front

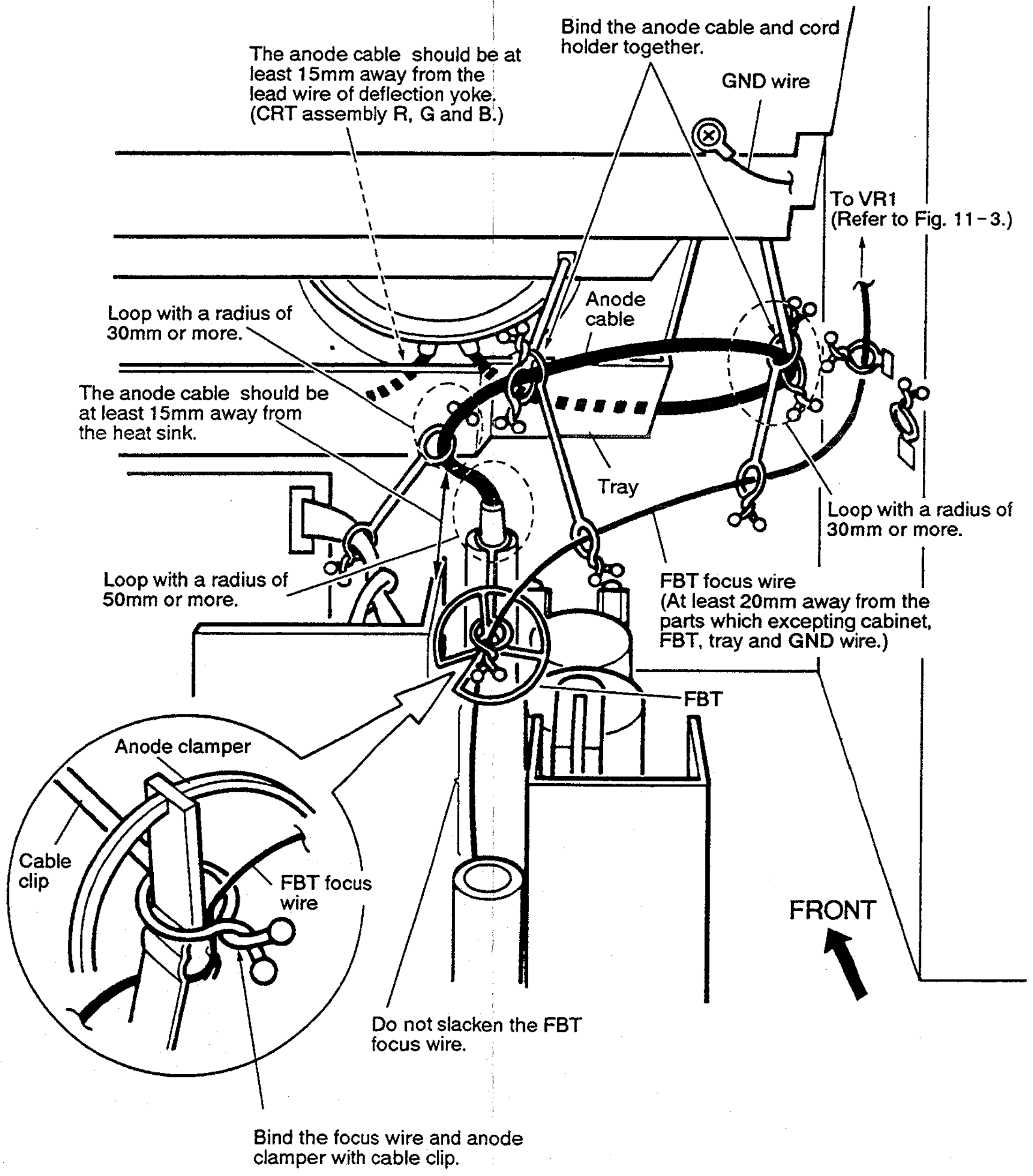

The anode cable should be at least 15mm away from the lead wire of deflection yoke. (CRT assembly R, G and B.)
Bind the anode cable and cord holder together.
GND wire
To VR1 (Refer to Fig. 11 - 3.)
Loop with a radius of 30mm or more.
Anode cable
The anode cable should be at least 15mm away from the heat sink.
Tray
Loop with a radius of 30mm or more.
Loop with a radius of 50mm or more.
FBT focus wire (At least 20mm away from the parts which excepting cabinet, FBT, tray and GND wire.)
FBT
Anode clamper
Cable clip
FBT focus wire
FRONT
Do not slacken the FBT focus wire.
Bind the focus wire and anode clamper with cable clip.

Fig. 11 - 2 Wiring diagram of the anode cable and FBT focus wire

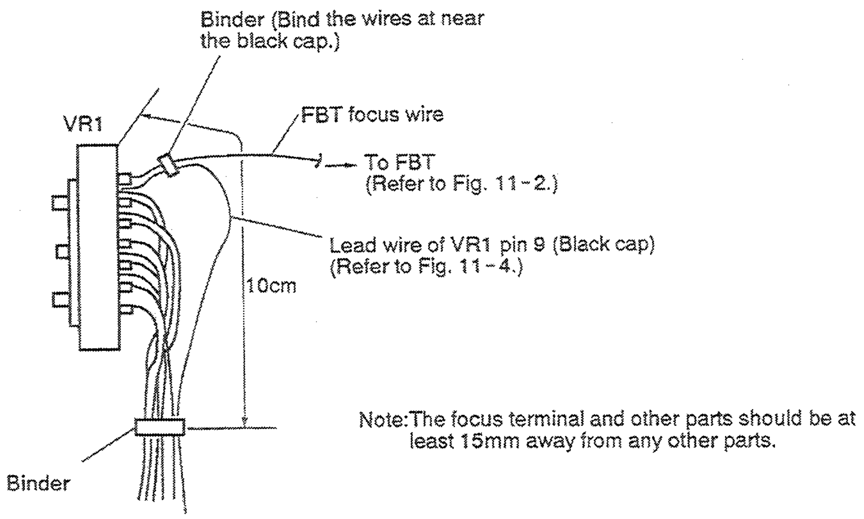

Binder (Bind the wires at near the black cap.)
VR1
FBT focus wire
To FBT (Refer to Fig. 11-2.)
Lead wire of VR1 pin 9 (Black cap) (Refer to Fig. 11-4.)
10cm
Note:The focus terminal and other parts should be at least 15mm away from any other parts.
Binder

Fig. 11-3 Wiring diagram of VR1 (focus variable resistor)

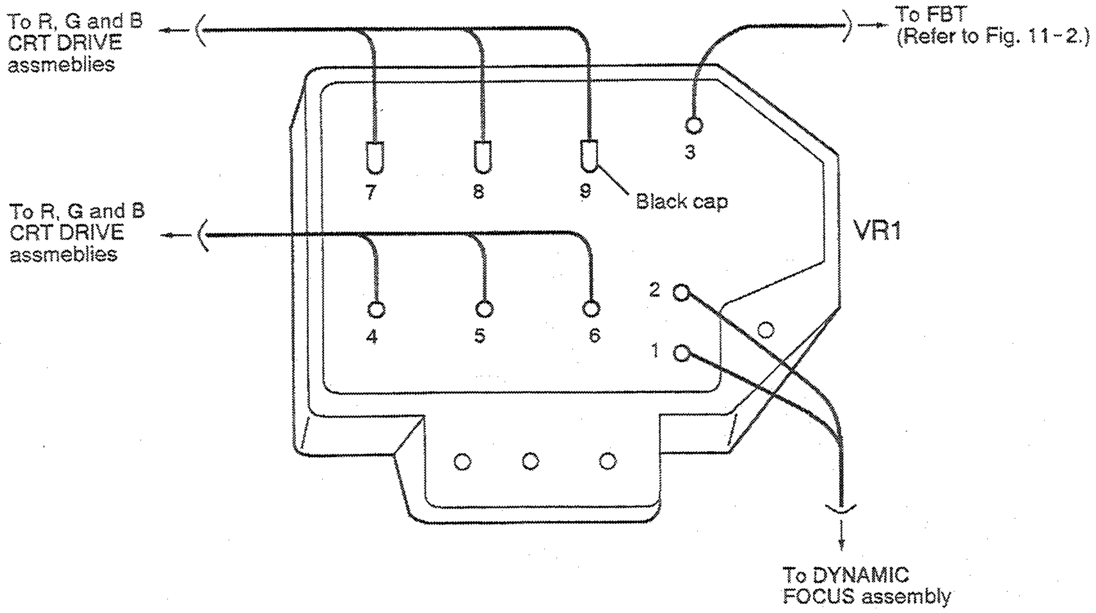
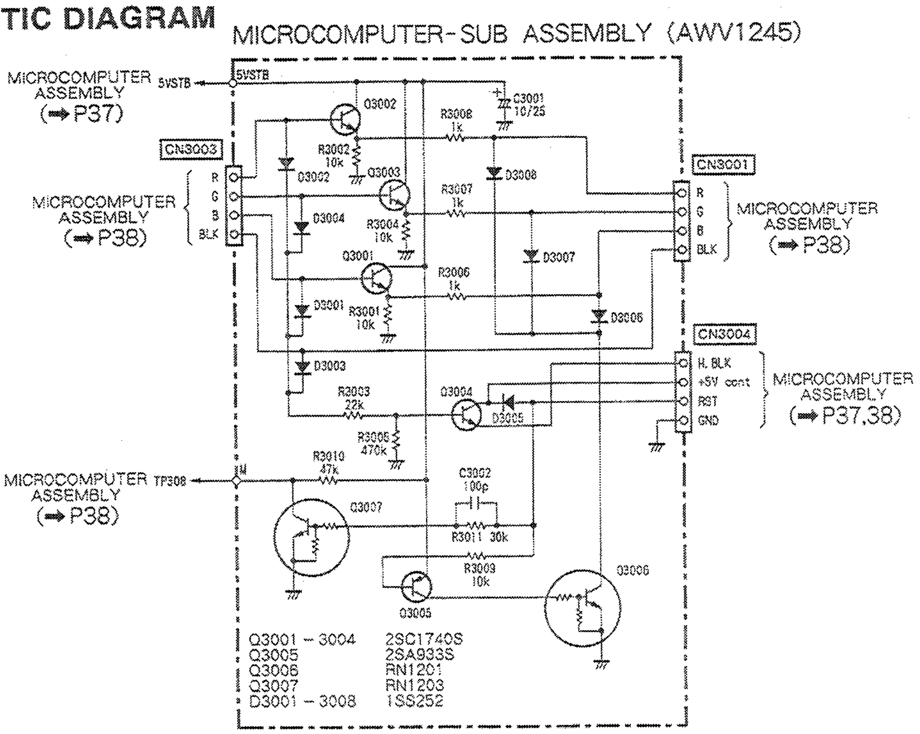

To R, G and B CRT DRIVE assmeblies
To FBT (Refer to Fig. 11-2.)
3
7
8
9
Black cap
To R, G and B CRT DRIVE assmeblies
VR1
2
4
5
6
1
To DYNAMIC FOCUS assembly

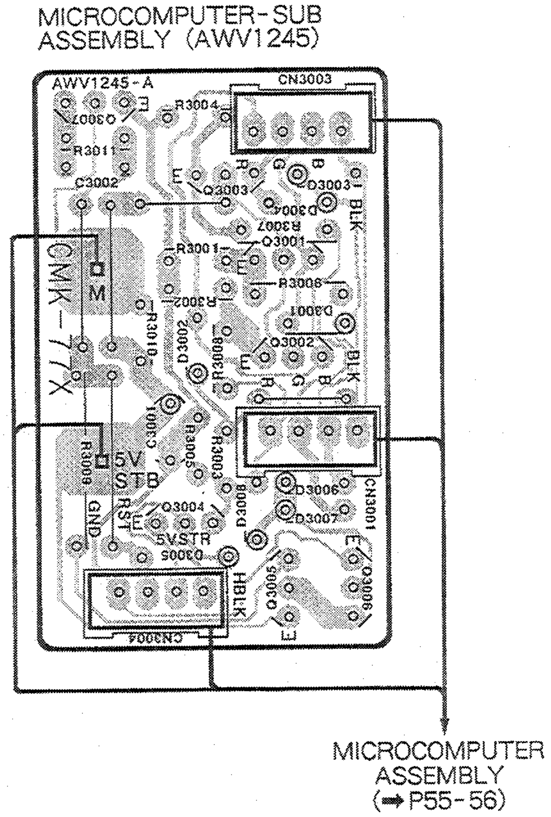
Fig.11-4 VR1 connections

# 12. MICROCOMPUTER- SUB ASEMBLY

## 12.1 SCHEMATIC DIAGRAM


MICROCOMPUTER-SUB ASSEMBLY (AWV1245)
MICROCOMPUTER ASSEMBLY (➡P37)
5VSTB
CN3003
MICROCOMPUTER ASSEMBLY (➡P38)
R
G
B
BLK
Q3002
R3008 1k
C3001 10/25
R3002 10k
D3002
Q3003
D3008
R3007 1k
D3004
R3004 10k
Q3001
D3007
R3006 1k
D3001
R3001 10k
D3006
CN3001
MICROCOMPUTER ASSEMBLY (➡P38)
CN3004
H. BLK
+5V cont
RST
GND
MICROCOMPUTER ASSEMBLY (➡P37,38)
D3003
R3003 22k
Q3004
D3005
R3005 470k
R3010 47k
MICROCOMPUTER ASSEMBLY (➡P38)
TP308
M
C3002 100p
Q3007
R3011 30k
R3009 10k
Q3006
Q3005
Q3001 – 3004 2SC1740S
Q3005 2SA933S
Q3006 RN1201
Q3007 RN1203
D3001 – 3008 1SS252

## 12.2 P.C. BOARD PATTERN


MICROCOMPUTER-SUB ASSEMBLY (AWV1245)
AWV1245-A
CN3003
CMK-77X
5V STB
GND
RST
HBLK
CN3004
CN3001
MICROCOMPUTER ASSEMBLY (➡P55-56)

## 12.3 PCB PARTS LIST

| Mark | No. | Description | Part No. |
|---|---|---|---|
| **SEMICONDUCTORS** | | | |
| | Q3001-3004 | TRANSISTOR | 2SC1740S |
| | Q3005 | TRANSISTOR | 2SA933S |
| | Q3006 | TRANSISTOR | RN1201 |
| | Q3007 | TRANSISTOR | RN1203 |
| | D3001-3008 | DIODE | 1SS252 |
| **CAPACITORS** | | | |
| | C3001 | ELECTR. CAPACITOR | CEAS100M25 |
| | C3002 | CERAMIC CAPACITOR | CCCSL101J50 |
| **RESISTORS** | | | |
| | ALL RESISTORS | | RD1/8PM□□□J |

PIONEER®
*The Art of Entertainment*

PROJECTION MONITOR RECEIVER

# SD-T5000

**NTSC/PAL/SECAM**

## Operating Instructions

*Thank you for purchasing the PIONEER Projection Monitor Receiver.
If you have not read the precautionary instructions enclosed with these operating instructions, please do so before proceeding.
After learning how to operate the Projection TV be sure to keep this manual handy for future reference.*

*While the official name of the product is the "PROJECTION MONITOR RECEIVER", for the sake of brevity the text refers to it as the "Projection TV".*

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3 LINE VOLTAGE SELECTOR
4 PRELIMINARY INSTRUCTIONS
5 FEATURES
6 INSTALLATION
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### *OPERATING PRECAUTIONS*

*DO NOT ALLOW STILL PICTURES OR PARTS OF PICTURES THAT DO NOT MOVE TO REMAIN ON THE SCREEN FOR AN EXTENDED LENGTH OF TIME. STILL IMAGES CAN ADVERSELY AFFECT YOUR PICTURE PROJECTION TUBES. SOME EXAMPLES OF STILL IMAGES ARE COMPUTERS, TELEVISION PROGRAMMING LOGOS AND VIDEO GAMES. IF STILL PICTURES CANNOT BE AVOIDED, REDUCE THE BRIGHTNESS AND CONTRAST LEVELS OF THE PICTURE TO MINIMIZE ANY DAMAGE THAT MIGHT OCCUR.*

# IMPORTANT NOTICE

## WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO WET LOCATIONS.

The model number and the serial number of this Projection TV are located on the rear panel.
Please write the serial number on the enclosed warranty card and keep it in a safe place for future reference.

***NOTE:***
*There are no user serviceable parts inside the Projection TV.*

**WARNING: The apparatus shall not be exposed to dropping or splashing.**

# IMPORTANT

**CAUTION**
**RISK OF ELECTRIC SHOCK**
**DO NOT OPEN**

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

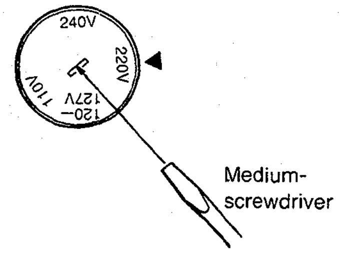
***CAUTION:***
**TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USERSERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

# LINE VOLTAGE SELECTOR SWITCH

**Only the multi-voltage model is provided with this switch.**
Mains voltages in Saudi Arabia are 127V and 220V only. Never use this model at the 110V setting in Saudi Arabia.
You will find the VOLTAGE SELECTOR switch on the rear panel. Before your model is shipped from the factory, the switch is set to the power requirements of the destination; nevertheless, you should check that it is set properly before plugging the power cord into the AC outlet. If the voltage is not properly set, or if you move to an area where the voltage requirements differ, convert the VOLTAGE SELECTOR switch as follows.

VOLTAGE SELECTOR



**Before converting disconnect the power cord.**
1. Use a medium-size screwdriver.
2. Insert the screwdriver into the groove of the VOLTAGE SELECTOR switch and turn until it points to the voltage value of your area.

# PRELIMINARY INSTRUCTIONS

## WHERE TO PUT THE PROJECTION TV

### LIGHTING

Bright lights or direct sunlight will dull the picture. Set the Projection TV so that the screen faces away from windows.

### AIR CIRCULATION

Leave space for air to circulate behind the Projection TV. Keep away from curtains and other furnishings that could block ventilation.

### HEAT DAMAGE

Damage may occur if you leave the Projection TV in direct sunlight or near a heater.

### OPTIMUM VIEWING DISTANCE

3 to 7 m is the range recommended for viewing comfort.

## POWER SOURCE

This Projection TV operates on AC 110 V/120-127 V/220 V/240 V, standard household voltage.

**NEVER CONNECT THE PROJECTION TV TO OTHER THAN THE SPECIFIED VOLTAGE, OR TO DIRECT CURRENT.**

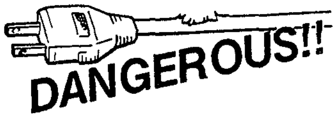
## POWER OUTLET

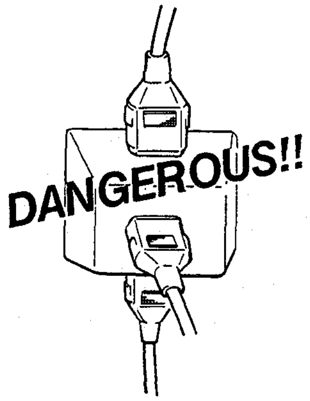
- A damaged cord or plug is a fire hazard. If you notice wear or damage, have it fixed by qualified service personnel.
- Plug directly into the wall socket. *Do not use extension cords or other receptacles.* Do not overload the outlet; it may cause a fire hazard.

***NOTE:***

- *Never remove the back cover of the Projection TV as this will expose you to dangerously high voltage and other hazards. If the set does not operate properly, unplug it and refer to page 44.*

- DANGEROUS





## POWER-CORD CAUTION

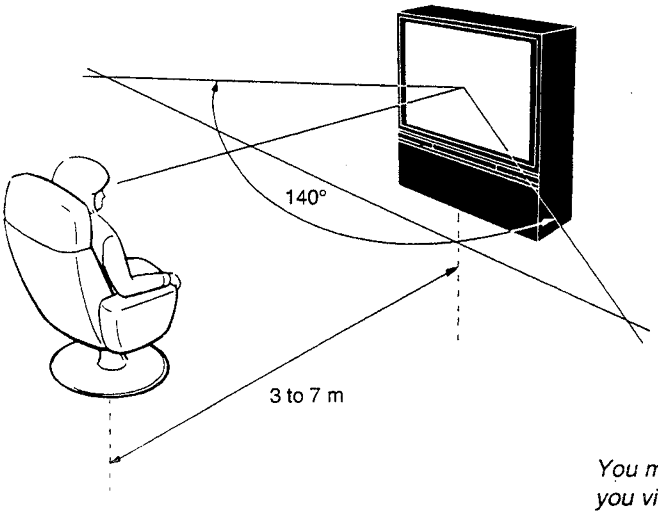
Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed in such a way that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord regularly. If you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

# FEATURES

## Wide Viewing Range Screen

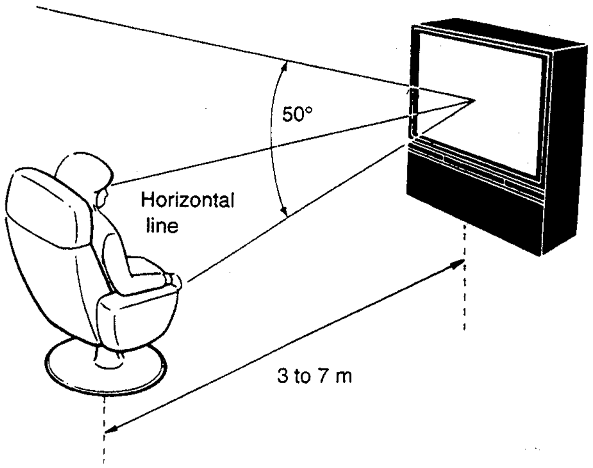
- 140° Horizontal Viewing Angle and 50° Vertical Viewing Angle.

### Horizontal Viewing Angle



### Vertical Viewing Angle

Watch from at least 3 meters away from the screen.
(Optimum viewing distance is 3 to 7 meters.)



*You may sometimes see double images or rainbowlike effects if you view from outside of the recommended area shown here.*

## Amazingly Bright Picture

- New, highly efficient lens system.
- High-power picture tubes employ advanced anode stabilization circuitry.
- Picture realized by newly developed phosphorescent screen for the picture tubes.

## Much Greater Contrast with Extended Gradation

- True black reproduction under all conditions, owing to a Black Level Correction Circuit.

## Microcomputerized Dynamic Picture Optimizer (DPO)

- DPO (Dynamic Picture Optimizer) circuit detects room light and optimizes the TV picture accordingly.

## Equipped with a VNR (Video Noise Reduction) system for reducing noise on the screen

## AV Memory

- After adjusting the picture and sound quality, you can store your settings in “AV memory”. Four AV memory settings can be stored and recalled.

## Video mode selection feature for the EURO connectors

- You can choose the video input mode of the Projection TV’s EURO connectors: S (Separate) video or composite video inputs.

## Table of pages feature (TOP)-compatible Teletext system in addition to FASTEXT and STANDARD TELETEXT.

- You can enjoy Teletext service without the need for any additional adaptors.

## Multisystem Video

- This projection TV incorporates PAL, SECAM, NTSC and 4.43NTSC color systems and B/G, I, D/K, L, L' and M tuner reception systems.

## Multisystem Tuner Stereo Mode

- NICAM DIGITAL Stereo (B/G, I)
- CCIR 2 Carrier Analog Stereo (B/G)
- MTS (M)

## TV Station and AV Input Labeling

# INSTALLATION

## ANTENNA CONNECTION

Connect to an outdoor antenna or centralized antenna terminal. (See page 12 for details.)

## MOUNTING

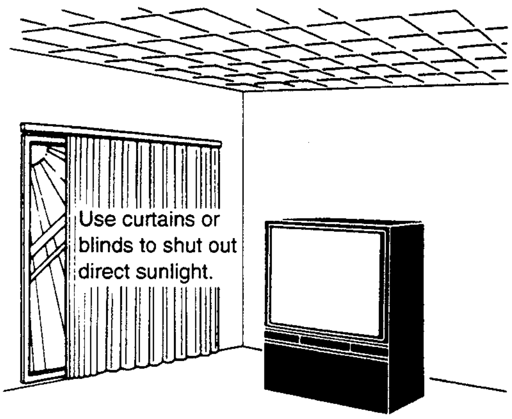
The Projection TV is designed to be placed on the floor or on a sturdy platform. The mounting surface should be flat and steady.

### *INSTALLATION PRECAUTIONS:*

Place of Installation

- When the Projection TV is operating, it is cooled by air-flow through ventilation holes in the rear and bottom. Therefore, avoid placing it in a location where the cooling air-flow is hindered (e.g. against a wall).
- Avoid places subject to extremely high temperatures or humidity, or to temperatures of 5°C or lower. Also avoid dusty places.
- Do not set the Projection TV in an unstable location (such as on a shaky or tilted platform).
- When setting the Projection TV on a floor made of soft material, make sure that the floor is not damaged by the weight of the Projection TV.
- If the room temperature suddenly rises (or if the Projection TV is moved from a cool place to a hot place), condensation may form on the lenses, resulting in picture distortion or color fading. If this occurs, simply wait a while (with the ⏻ switch on) and the condensation will disappear.

Downward spot lights or fluorescent lights in an overhead "Honeycomb" prevent direct illumination of the screen.


Use curtains or blinds to shut out direct sunlight.

Cover shiny surfaces (floor and walls) with nonreflective materials (carpet, rugs, wallpaper, etc.).

# OPERATING PRECAUTIONS

### Keep away from magnetic fields

The picture may be distorted if strong magnetic fields are nearby. External loudspeakers should be set at least 60 cm away from the Projection TV. Electric fans and other motor driven appliances and toys may also be sources of magnetism.

### When moving the Projection TV

Pull out the plug and move the Projection TV carefully. Be particularly careful not to bump or scratch the screen. To avoid damage to the caster wheels you may need to lift the Projection TV when going over irregular surfaces.

### Install in a flat, steady place

Do not put the Projection TV on a surface that is tilted, unsteady or prone to shake or vibrate. A shaky or slanted platform is dangerous.

### Adjust room illumination

Excessively bright or dim lighting may strain your eyes. Draw the curtains if necessary to shut out direct sunlight.

### When not using the Projection TV for a long time

For safety, unplug the power cord when leaving the Projection TV turned off for a long period of time.

### Condensation and picture blurring

- You may see a blurred picture if the Projection TV is moved from a cool to a warm location or if room temperature rises very rapidly. This occurs when moisture from the air condenses on the optical parts.
- The picture will return to normal if you leave the Projection TV turned off for 1 or 2 hours, before using it.
- A gradual change in temperature can prevent dew formation.

### A word about still pictures

- Do not project a still picture on your Projection TV for a long period of time. (For example: when using your Projection TV for video games, displaying a test pattern, monitoring your personal computer, or while playing back video discs.) This can adversely affect Projection TV's CRT. If this cannot be avoided, reduce the contrast of the picture in order to minimize any damage which might occur.

### MAINTENANCE OF EXTERNAL SURFACES

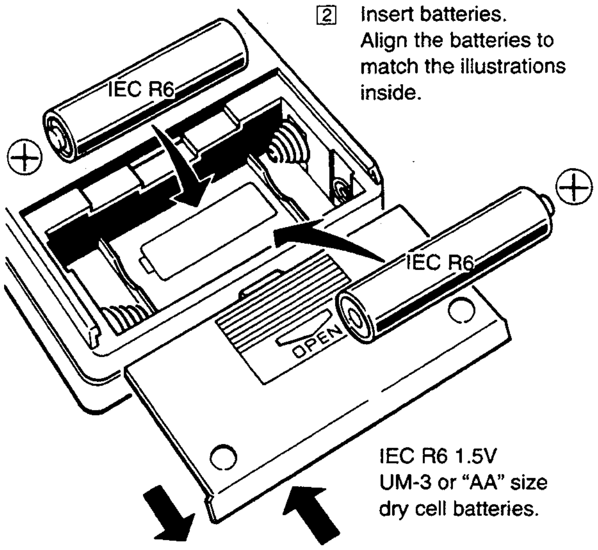
- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleaner diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

# INSERTING BATTERIES IN THE REMOTE CONTROL UNIT

You will find the remote control unit packed inside the Projection TV box. Open the remote control unit and insert the batteries. Follow the procedure below:

1. Open the battery compartment on the rear of the remote control unit. Press down with your thumb while sliding the lid outward.
2. Note the polarity (+ and –) markings in the case. Insert the supplied batteries so that they match the markings.
3. Close the lid by sliding it back in until it clicks into place.

## INSERTING BATTERIES



2 Insert batteries. Align the batteries to match the illustrations inside.

IEC R6 1.5V UM-3 or "AA" size dry cell batteries.

1 Open by pressing with your thumb while sliding outward.

3 Close the lid by sliding it back into place.

**Incorrect use of batteries may lead to leakage or rupture.**
**Always be sure to follow these guidelines:**

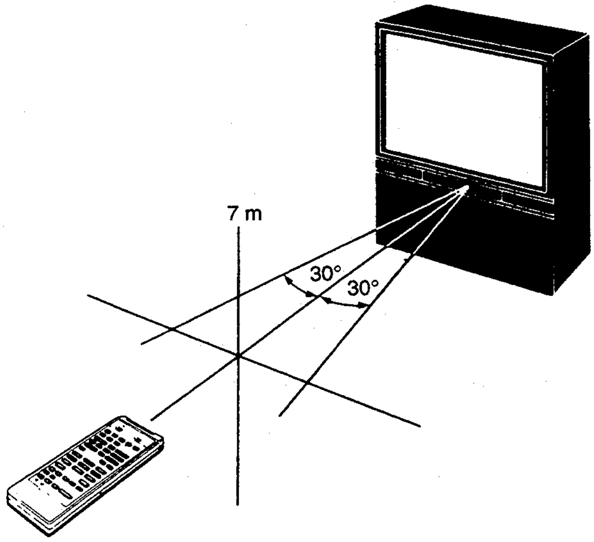
**A.**
Always insert batteries into the battery compartment correctly matching the positive + and negative – polarities, as indicated inside the compartment.

**B.**
Never mix new and used batteries.

**C.**
Batteries of the same size may have different voltages, depending on their type. Do not mix different types of batteries.

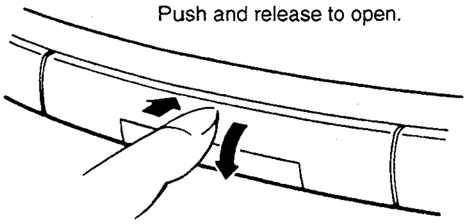
# REMOTE CONTROL OPERATION RANGE

- Point the remote control unit toward the front of the Projection TV when you press any of the control buttons.
- The remote control unit should be effective at distances of up to about 7 meters from the Projection TV and at angles of up to about 30 degrees from a line perpendicular to the front panel.
- Furniture and other obstacles may block the infrared light beam so that it cannot reach the sensor on the Projection TV's front panel.
- If there is no response even when the remote control is used directly in front of the Projection TV, the dry cell batteries may need replacement.
- Performance of the remote control unit is a adversely affected in the presence of strong fluorescent light. Keep such lights away from the sensor window in particular.



# FRONT PANEL FACILITIES

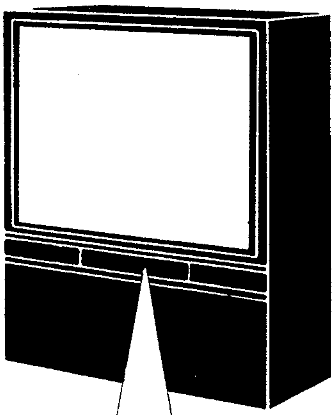
A flip-down door conceals the control panel. Push gently and release to open the door.
To close the door, lift it back up into place.



Push and release to open.

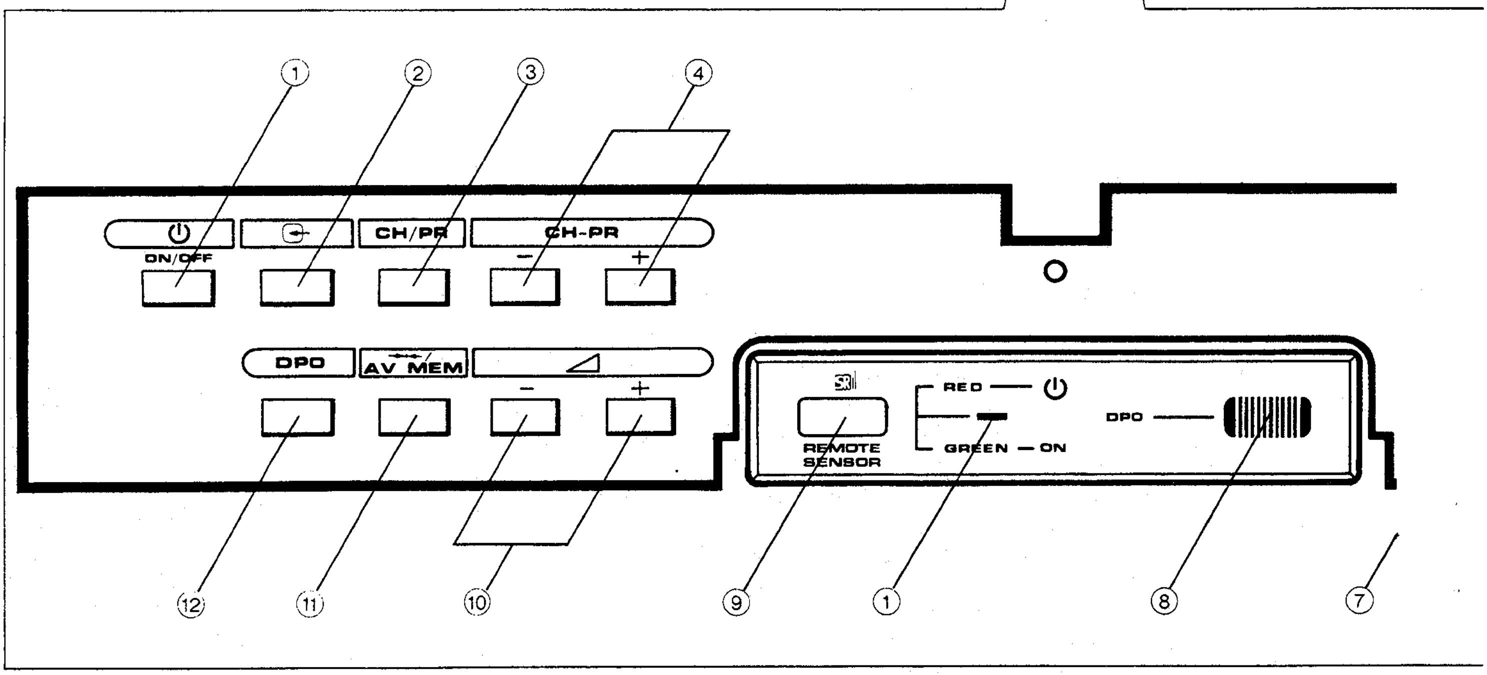
*NOTE:*

- *If you accidentally pull the door open, it may not shut properly. Push in when shutting the door to restore it to normal operation.*



## Control Panel

- Use the remote control unit to operate most functions. See pages 14 to 25.



**Attention**

The Projection TV will not function properly in the following cases:

- Lightning storms.
- High static electricity environment.
- Poor voltage regulation in the power source.

If the Projection TV does not operate properly, reset it as follows.

① Unplug from the power supply for approximately 1 minute.
② Plug the power cord in again to reset it.

Some memorized modes such as the last memorized mode may be erased when resetting the Projection TV.

## FRONT PANEL FACILITIES

**① ⏻ (STANDBY) OFF/ON Button**

Press once to turn on the power (the indicator turns green). Press again, to set to standby mode (the indicator turns red). This unit is equipped with an Auto STANDBY circuit, eight minutes after the input signal ceases to be supplied (for example, the TV channel being received stops broadcasting), the set will automatically switch to stand-by mode.

**② ⊖ (Input Selector) Button**

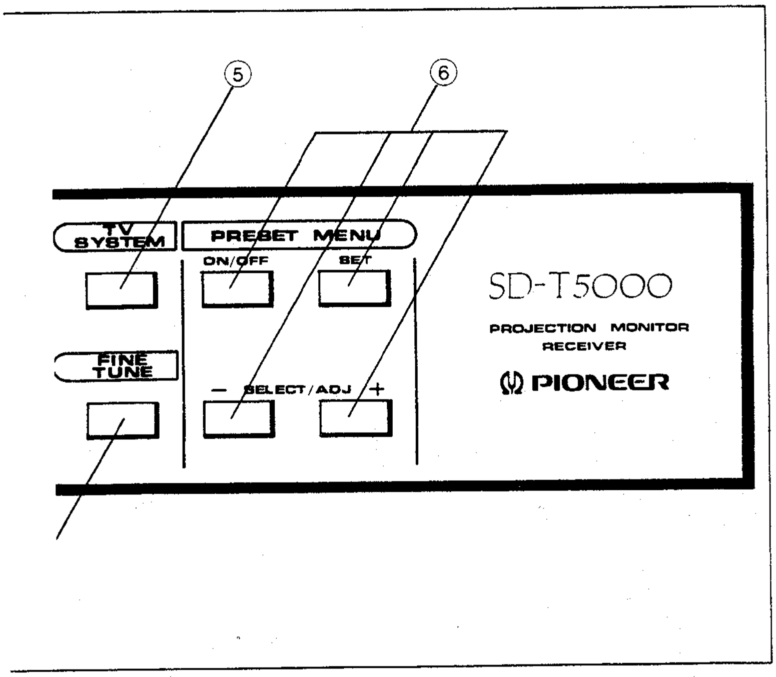
Press to select INPUT source. INPUT sources will change as follows: TV, AV-1, AV-2, AV-3 or AV-4. Even when TV, AV-2, AV-3 or AV-4 is selected, if a switching voltage is received from AV-1, the input selector switches to AV-1.

**③ CH/PR (Channel/Program) Button**

Press to switch between the channel and the program number tuning functions.

**④ CH-PR (Channel-Program) +/– Buttons**

Press up (+) or down (–) to tune to a higher or lower channel or program. Only those programs in STATION STORING can be tuned in by this method. For details, see page 17.



**⑤ TV SYSTEM MODE Button**

To select TV system, B/G, D/K, L, L', I or M during TV reception and to select channel table.

**⑥ PRESET MENU Buttons**

These buttons are used to perform the following presetting operations: color convergence adjustment, AV memory storing, DPO adjustments, Video mode settings, Color system setting, Sound system setting and TV stations storing. For details, refer to the description of each function.

**ON/OFF:** Press to turn the operation menu on and off. When the operation menu is turned on, CONVERGENCE, AV MEMORY, DPO BASE, VIDEO SYSTEM, COLOR.SYSTEM, SOUND SYSTEM and STATIONS STORING will appear on the screen.

**SELECT/ADJ:** Press to select or adjust each of the above operations. The selected item will turn red on the screen.

These buttons are used as channel select buttons when the stations storing operation is engaged.

**SET:** Press to store the setting after adjusting or selecting an item.

**⑦ FINE TUNE Button**

Press to turn the fine tuning function on and off. Press the PRESET MENU SELECT/ADJ +/– buttons after turning on the fine tuning function if you wish to finely adjust the tuning.

**⑧ DPO SENSOR**

This sensor detects ambient lighting for the DPO (Dynamic Picture Optimizer) circuit which optimizes the TV picture accordingly.

**⑨ REMOTE CONTROL SENSOR**

This sensor picks up infrared signals from the remote control unit.

**⑩ ◁ (Volume) Buttons**

Press the plus (+) or minus (–) button to raise or lower the volume.

**⑪ AV-MEM audio/video (Standard/AV Memory) Button**

Press to switch between the standard (STD) picture/sound settings and the AV MEMORY 1, 2, 3 and 4 settings which have been input with the PRESET MENU.

**⑫ DPO (Dynamic Picture Optimizer) Button**

You can turn the DPO on or off as desired. When the DPO is on, it automatically adjusts the picture to compensate for room illumination.

For details, see page 29.

# SYSTEM CONNECTION DIAGRAM

- Turn off all the components before making connections.
- Refer to the operating instructions for your video cassette recorder, LD player and other equipment for details on how to make connections.

**⊤ (Antenna input) Terminal**

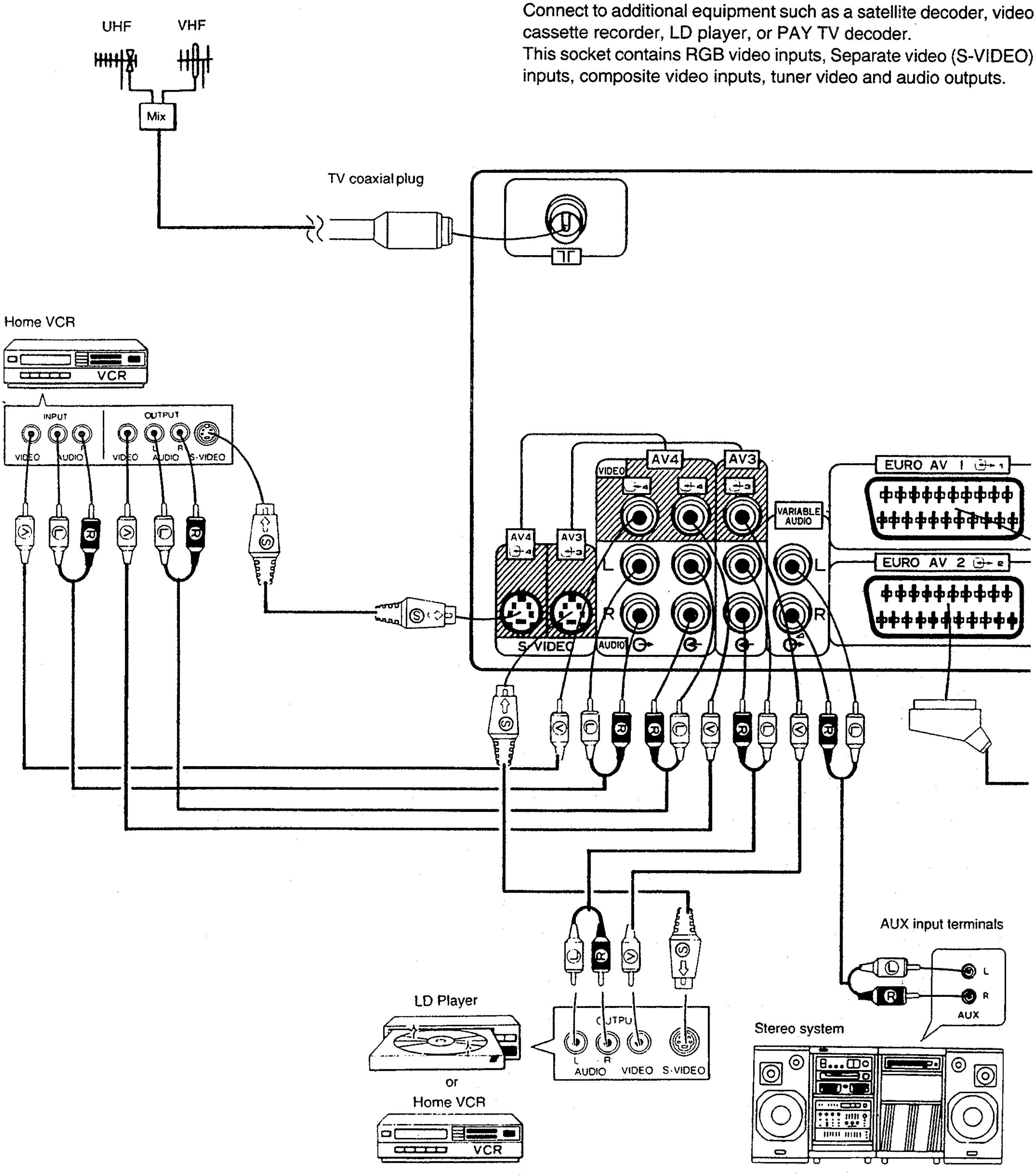
Connect to 75 Ω antenna cable.

**EURO AV 1 ⊖→1 socket**

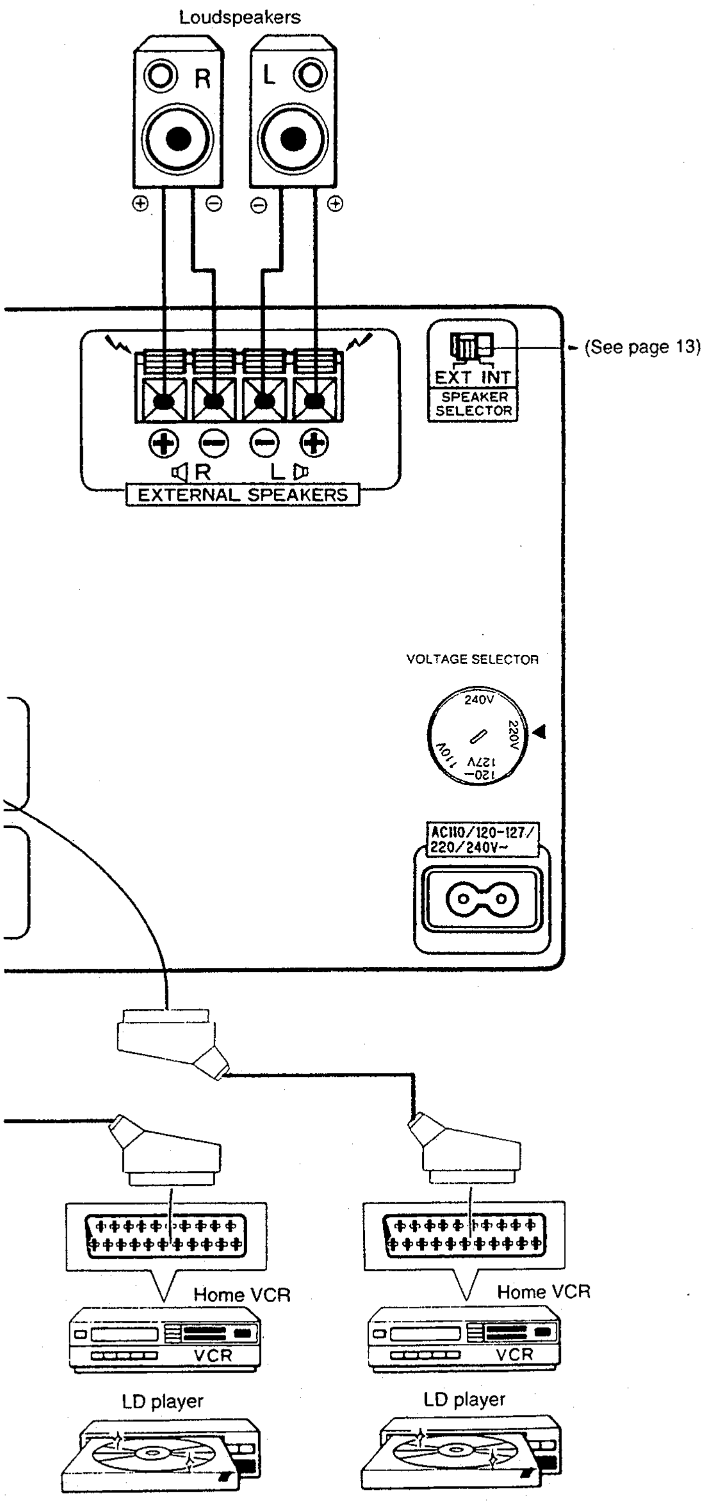
**(For TV recording and playback)**

Connect to additional equipment such as a satellite decoder, video cassette recorder, LD player, or PAY TV decoder.

This socket contains RGB video inputs, Separate video (S-VIDEO) inputs, composite video inputs, tuner video and audio outputs.


UHF
VHF
Mix
TV coaxial plug
⊤
Home VCR
VCR
INPUT
VIDEO
AUDIO
OUTPUT
VIDEO
AUDIO
L
R
S-VIDEO
AV4
AV3
VIDEO
AV4
AV3
VARIABLE AUDIO
L
R
S-VIDEO
AUDIO
EURO AV 1
EURO AV 2
AUX input terminals
L
R
AUX
Stereo system
LD Player
or
Home VCR
VCR
OUTPUT
L
R
AUDIO
VIDEO
S-VIDEO

## SYSTEM CONNECTION DIAGRAM



**AC110/120—127/220/240V~** **POWER TERMINAL**
Connect to a Localised power outlet (I.E. wall socket), using a power cord.

**EURO AV 2 ⊖-2 socket**
**(For AV-1, AV-3 and AV-4 recording and AV-2 playback)**
Connect to additional equipment such as a satellite decoder, video cassette recorder, LD player, or PAY TV decoder.
This socket contains Separate video (S-VIDEO) inputs, composite video inputs, video and audio outputs for monitoring.

**AV3 ⊖-3 terminals (for playback)**
Connect to additional equipment such as a video cassette recorder or LD player.

**S-VIDEO (Separate-Video):** If you attach additional equipment to this terminal, use an optional S-Video connection cord. (If both the RCA pin terminal and S-VIDEO terminals are connected at the same time, the RCA pin terminal input signal will be automatically cut off when equipment is plugged into this terminal.)

**RCA pin (Video Input):** Connect to the video output terminal of your equipment.

**R/L ⊖ (Left and Right Inputs):** Connect to the left and right channel output audio terminals of your equipment.

**AV4 ⊖-4 terminals**
Connect to additional equipment such as a video cassette recorder or LD player.

**S-VIDEO (Separate-Video):** If you attach additional equipment to this terminal, use an optional S-Video connection cord. (If both the RCA pin terminal and S-VIDEO terminals are connected at the same time, the RCA pin terminal input signal will be automatically cut off when equipment is plugged into this terminal.)

**RCA pin ⊖-4 (Video Input):** Connect to the video output terminal of your equipment.

**R/L ⊖ (Left and Right Audio Inputs):** Connect to the left and right channel output audio terminals of your equipment.

**AV4 ⊖-4 terminals**
**RCA pin ⊖-4 (Video Output):**
Connect to additional video equipment for monitoring video cassette recorder, for example.
**R/L (Left and Right Audio Outputs):**
Connect to audio inputs of additional video equipment or audio system.

**⊖ terminals**
**(Left and Right Variable Audio Outputs)**
Connect to the Audio auxiliary inputs of your Hi-Fi audio system. You can listen to the sound of the selected input video via your Hi-Fi system. These outputs are controlled by the volume, bass, treble and balance controls of the Projection TV.

***NOTE:***
- *Signals from these output jacks will be affected by AV memory, bass and treble tone adjustments using the—AV MEM button, SOUND button, ADJUST ◀, ▶ button.*

**EXTERNAL SPEAKERS TERMINALS**
**(L : Left channel/ R: Right channel)**
Connect to additional loudspeakers (purchased separately, see page 13)

**SPEAKER SELECTOR SWITCH (EXT/INT)**
To select which loudspeakers; internal or external, are used. (See page 13).
**EXT (External):** Output from the EXTERNAL SPEAKERS terminals.
Sound from the internal loudspeakers will be cut off.
**INT (Internal):** Output from the internal loudspeakers. Sound from the EXTERNAL SPEAKERS terminals will be cut off. Normally set switch to this position.

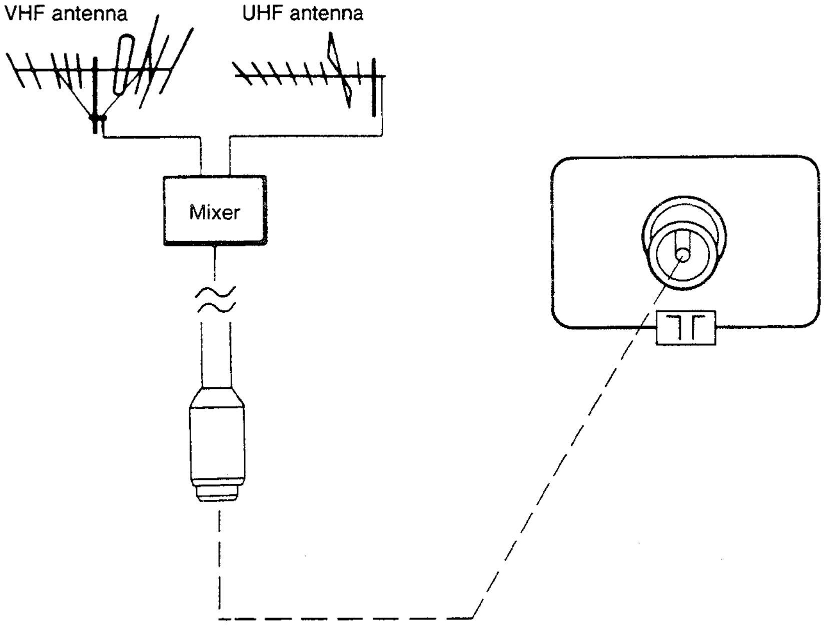
# ANTENNA CONNECTIONS

A good color picture, good stereo sound and teletext operation depends on a good TV signal. To ensure the highest signal quality, choose an antenna that suits your reception area and have it properly installed. Ask your dealer for advice.
Of course, if you will be subscribing to cable or have a central antenna for your building, then you will not need an external antenna. However, proper connections from the TV signal source to your Projection TV are essential. Please refer to the instructions below.

## USING THE ANTENNA CABLE CONNECTOR

The cable connector plugs into the Projection TV's antenna terminal. This unit is designed to connect to a 75 Ω coaxial cable using a TV coaxial plug.

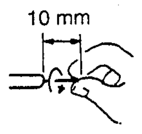
**Connect the antenna cable connector into the ㄱㄏ (antenna) terminal.**

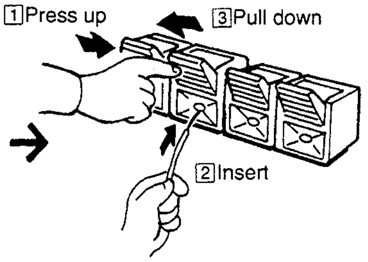


# LOUDSPEAKERS

## CONNECTING EXTERNAL LOUDSPEAKER WIRES

Turn off the power of the Projection TV.





Strip each wire so that about 10 mm is exposed. Twist the core.

Push the lever, insert the wire, and pull the lever down to lock the wire into place. Pull gently on the wire to check that it is securely connected.

Do this for each wire. Be careful to connect the right loudspeaker's plus and minus terminal wires to the "R" "+" and "–" terminals. Likewise, connect the left loudspeaker's plus and minus terminal wires to the "L" "+" and "–" terminals.

**Precautions**

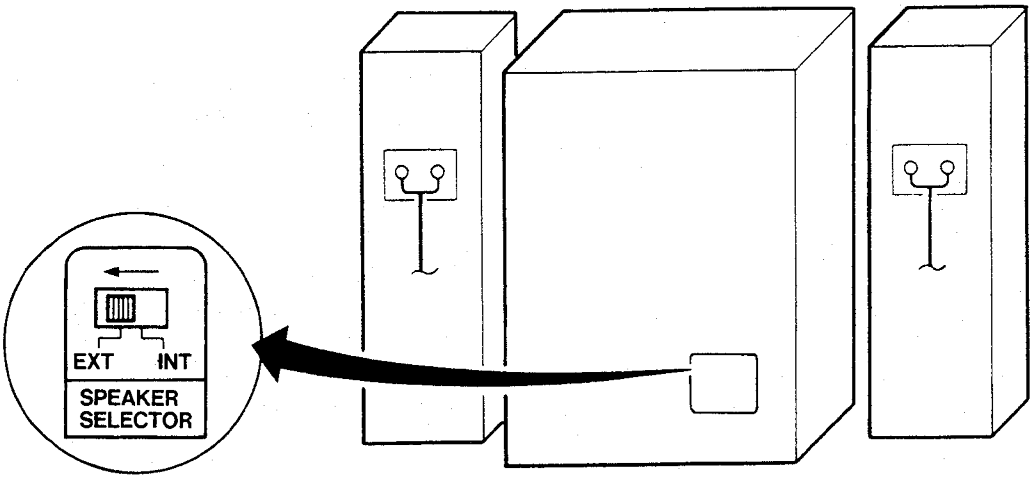
- Be sure that exposed wires do not protrude and touch each other.
- If you do not hear a normal stereo image when listening to a stereo program, it may be because the "+" and "–" connections are reversed for one of the external loudspeakers.
- Make sure that the right loudspeaker is connected to the "R" terminals and the left loudspeaker to the "L" terminals.
  Make sure that each loudspeaker's two wires are properly connected to the appropriate "+" and "–" terminals.

***NOTES:***

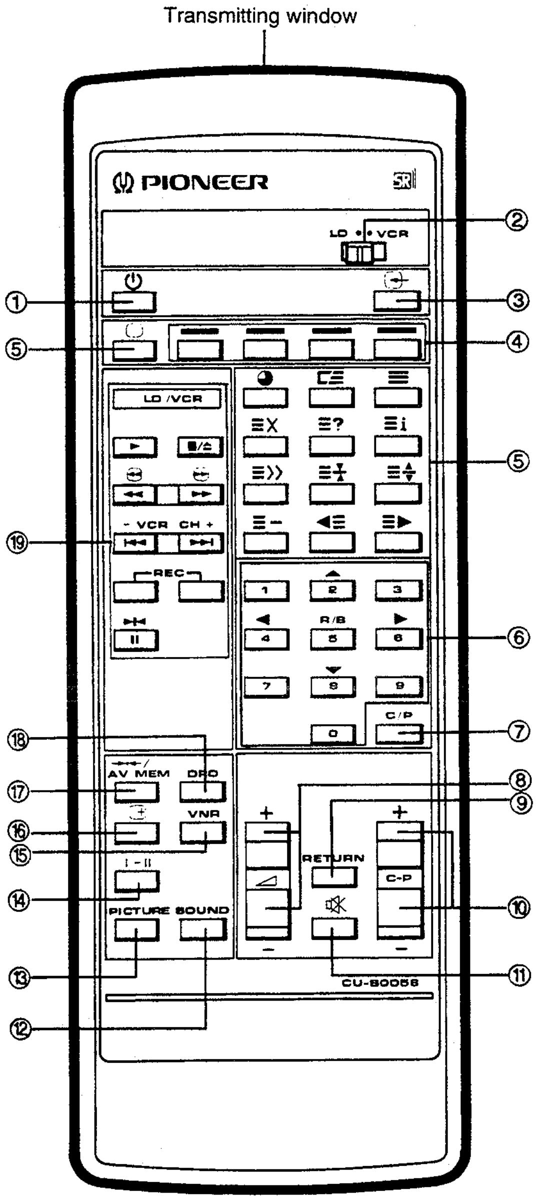
- *Use loudspeakers with an impedance rating of from 8 Ω to 16 Ω.*
- *Ordinary loudspeakers are not magnetically shielded and may disturb the picture if placed too close to the Projection TV. If you notice a problem, move the loudspeakers about 60 cm away from the Projection TV.*

## SPEAKER SELECTOR SWITCH

Set this switch to the INT position if you will be listening to the built-in loudspeakers. If you have connected external loudspeakers (or if you will be listening through your stereo system), then you can turn off the built-in loudspeakers by setting the switch to the EXT position.



# REMOTE CONTROL UNIT FACILITIES



① **Standby ( ⏻ )**
Press to turn the Projection TV off.

② **LD .. VCR Switch**
(LaserDisc/Video Cassette Recorder)
To select the remote control function mode of the LD/VCR remote control buttons; either LD or VCR.

③ **Input Selector**
Press to select the external video source you wish to watch.

↻TV - AV1 - AV2 - AV3 - AV4

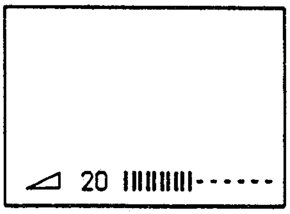
④ **Green, Yellow, Blue and Red Colored Buttons**
Press to select pages for the TOPTEXT or FASTTEXT. For details, see pages 38 to 40.

⑤ **Teletext Operation Buttons and Teletext Cancel ( ⊂⊃ ) Button**
Press to select teletext operations.
Press the ⊂⊃ button to cancel the Teletext function.

⑥ **Numeric Buttons (0 to 9)/ Power ON**
Press to select a TV channel or program directly. While Teletext is engaged, press to select Teletext page you wish to search. If the power is off, pressing these buttons turns the power on.
[2] ( ▲ : Up), [4] ( ◀ : To the left), [5]( R/B : To select Red or Blue), [6] ( ▶ : To the right) and [8] ( ▼ : Down) buttons are used to adjust color convergence when the convergence adjustment mode is engaged.

⑦ **C/P (Channel/Program)**
Press to select either channel number or program number when tuning to a television broadcast.

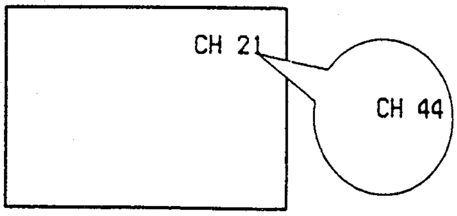
⑧ **◁ (Volume) +, – /ADJUST +, –**
Press the + button to increase the volume, and the – button to decrease it.
Volume adjustment will appear on the screen as numbers and a bar-graph. '63' indicates the maximum volume level. The display will disappear from the screen after 4 seconds.
Adjustments for SOUND items (bass, treble and balance) or PICTURE items (color, tint, contrast, brightness and sharpness) can also be made.
First press the SOUND or PICTURE button the necessary number of times to select the item to be set.
Then adjust the level using the (+) and (–) buttons.



*NOTE:*

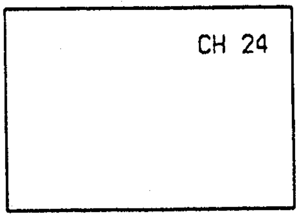
- *When using this button to control the volume after having used it for the Adjust function, make sure that the picture or sound adjustment display has disappeared.*
  *This button will operate as the picture or sound adjustment as long as a picture or sound adjustment display appears on the screen.*

⑨ **RETURN**
Press to switch between the current channel or program and the channel or program you were watching immediately before. This is useful, for example, if you wish to switch back and forth between two sporting events.



**⑩ C-P (Channel - Program) +, –**

Press the C-P (+) or C-P (–) to scan up or down among the channels or programs in stations storing.



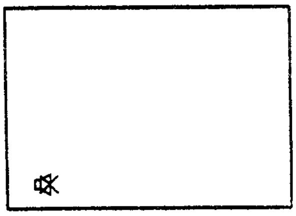
**⑪ 🔇 (Mute)**

Press to temporarily turn off the sound, and again to return to the previous volume level. This is useful, for example, when you get a phone call.

The 🔇 (Mute) display will appear in red while mute is engaged.

If the mute function is left on for over approx. 8 minutes, the function will be cancelled automatically, and the volume level will be reset to 0. 0.

The mute display will disappear from the screen when the mute is cancelled.



**⑫ SOUND**

Press to select the sound parameter to be adjusted.

→ 𝄢 (Bass) → 𝄞 (Treble) → ◭ (Balance) →

**⑬ PICTURE**

Press to select the picture parameter to be adjusted. The ◭ display will only appear on the screen if the NTSC or 4.43 NTSC color system is selected by pressing the PRESET MENU SELECT/ADJ button. (See preset menu operation "SELECTING THE COLOR SYSTEM".)

→ ❀ (Color) → ◭ (Tint) → ◑ (Contrast) →

← ◫ (Sharpness) ← ☼ (Brightness) ←

**⑭ I-II (TV Sound Mode)**

Press to select the reception TV sound mode.

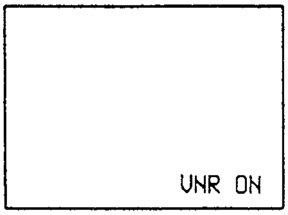
The switching sequence is as follows.

→ DUAL I → DUAL II →

← DUAL I /II ←

**⑮ VNR (Video Noise Reduction)**

You can turn VNR on or off as desired. When VNR is on, the noise on the screen is reduced. For details, see page 24.



**⑯ ⊕ (Display)**

Press once to display the current channel and/or other information on the screen.

**⑰ —/AV MEM (Standard/AV Memory)**

Press to switch between the standard (STD) picture/sound quality settings and your AV MEMORY 1, 2, 3 and 4 setting.

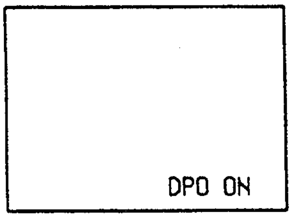
This button only recalls settings stored in AV MEMORY. To put the current picture/sound settings into AV MEMORY, use the control panel PRESET MENU buttons. For details, see page 30.

→ STANDARD → AV MEMORY 1 → AV MEMORY 2 →

← **DISPLAY OFF** ← AV MEMORY 4 ← AV MEMORY 3 ←
**(Temporary memory mode)**

**⑱ DPO (Dynamic Picture Optimizer)**

You can turn DPO on or off as desired. When DPO is on, it automatically adjusts the picture to compensate for room illumination. For details, see page 29.



**⑲ LD/VCR (LaserDisc/Video Cassette Recorder) Operation Buttons**

Press to operate a PIONEER LD player or video cassette recorder. For details, see page 16.

## REMOTE CONTROL UNIT FACILITIES

### Control buttons for a PIONEER LD Player and VCR

If your LD (LD Player) or VCR is a PIONEER model, your remote control unit can perform most basic operations without remote control code pressing.
The LD/VCR switch is used to select whether the remote control unit operation buttons will function as LD player or VCR control buttons.

### LD Player Control

**Turn on your LD player before operating.**

① **Set the LD/VCR switch to LD.**

② **Press the ⊖ button repeatedly to set the input selector to the AV connector/terminal to which the LD player is connected.**

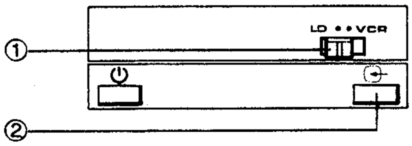
③ **Stop/Eject (■/▲) button**
Press once to stop playback, twice to eject the disc.

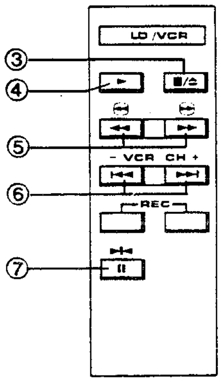
④ **Play (▶) button**
Press to begin playback.

⑤ **Scan (⊖◀◀ / ⊖▶▶) button**
Press the ▶▶ side of the button to search in the forward direction while playing back the videodisc.
Press the ◀◀ side of the button to search in the reverse direction while playing back the videodisc.

⑥ **Chapter Skip button (⏮/⏭)**
Press the ⏭ side of the button to skip directly to beginning of the next chapter, press the ⏮ side to skip directly back to the beginning of the chapter currently in play. This operation can only be performed on an LD Player with chapter skip function.

⑦ **Pause/Still (II/▶◀) button**
Temporarily interrupts playback.





### VCR Control

**Turn on your VCR before operating.**

① **Set the LD/VCR switch to VCR.**

② **Press the ⊖ button repeatedly to set the input selector to the AV connector/terminal to which the VCR is connected.**

③ **Stop/Eject (■/▲) button**
Press once to stop playback.
* Eject function will be performed only if your VCR is equipped with the remote control eject function.

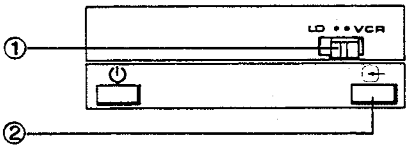
④ **Play(▶) button**
Press to begin playback.

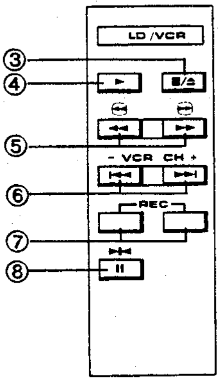
⑤ **Rewind/Fast Forward (⊖◀◀/⊖▶▶) button**
This button allows high-speed movement through parts of the tape that you don't wish to watch. Press the left side of the button to rewind the tape, and the right side to advance.
During playback, use this button to search visually forward or backward.

⑥ **VCR CH (Channel) +/– button**
Press to select the channel of the TV tuner on the VCR.

⑦ **REC (Record) buttons**
Press both buttons at the same time to start recording.

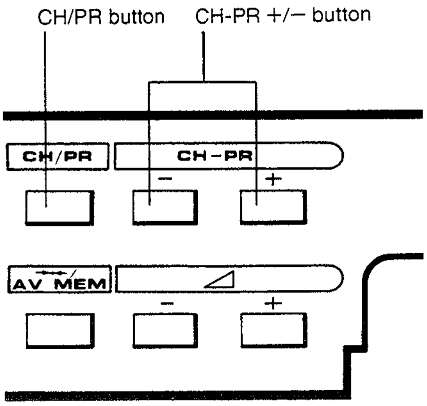
⑧ **Pause/Still (II/▶◀) button**
Temporarily interrupts recording or playback, producing a still picture during playback.





# TV CHANNEL SELECTION

The Projection TV uses a frequency synthesizer tuning system to permit reception of the B/G, I, D/K, L, L' and M reception standards and enables reception of up to almost 500 channels world-wide using 5 channel tables. (See pages 45 to 47).
You can use the "+" or "–" marked C-P button on the remote control unit or the control panel on the Projection TV to skip through the TV channels one by one.
Or you can use the remote control unit numeric buttons "0" through "9" to directly enter the channel or program number.

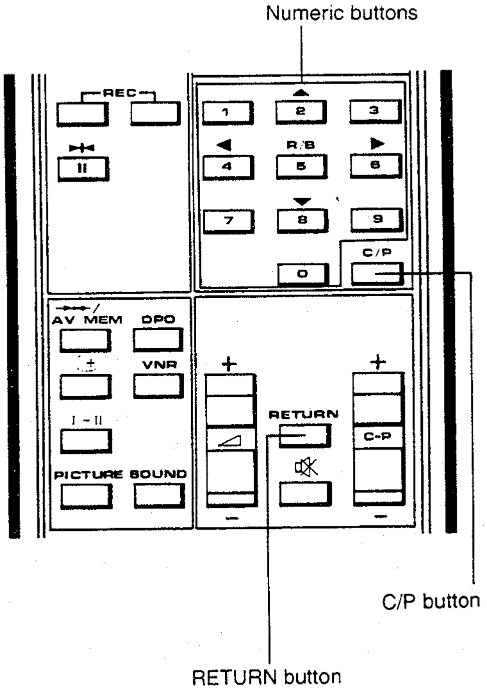


## To select a TV channel directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "PR" appears, press the C/P button to select "CH".
   **Example:**

| | |
|---|---|
| To select CH 9 | Press 9 (or press 0, then 9) |
| To select CH 59 | Press 5, then 9 |
| To select CH 20 | Press 2, then 0 |

*NOTE:*
- *When selecting a two-digit channel number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the channel number.*



## To select a program number directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "CH" appears, press the C/P button to select "PR".
   **Example:**

| | |
|---|---|
| To select PR 7 | Press 7 (or press 0, then 7) |
| To select PR 39 | Press 3, then 9 |
| To select PR60 | Press 6, then 0 |

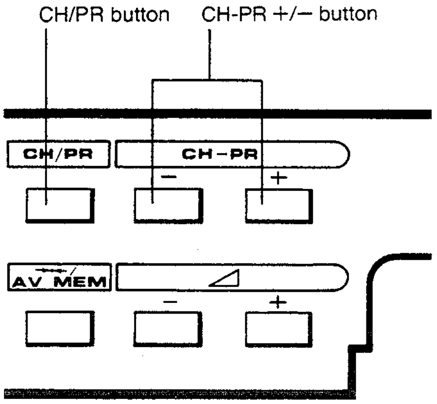
*NOTE:*
- *When selecting a two-digit program number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the program number.*

**If you wish to watch the previously selected channel**
Press the RETURN button on the remote control unit. The TV channel or programmed channel selected immediately prior to the current one will appear.

To return to the original TV channel or programmed channel, press the RETURN button again.

# TV CHANNEL SELECTION

The Projection TV uses a frequency synthesizer tuning system to permit reception of the B/G, I, D/K, L, L' and M reception standards and enables reception of up to almost 500 channels world-wide using 5 channel tables. (See pages 45 to 47).
You can use the "+" or "–" marked C-P button on the remote control unit or the control panel on the Projection TV to skip through the TV channels one by one.
Or you can use the remote control unit numeric buttons "0" through "9" to directly enter the channel or program number.

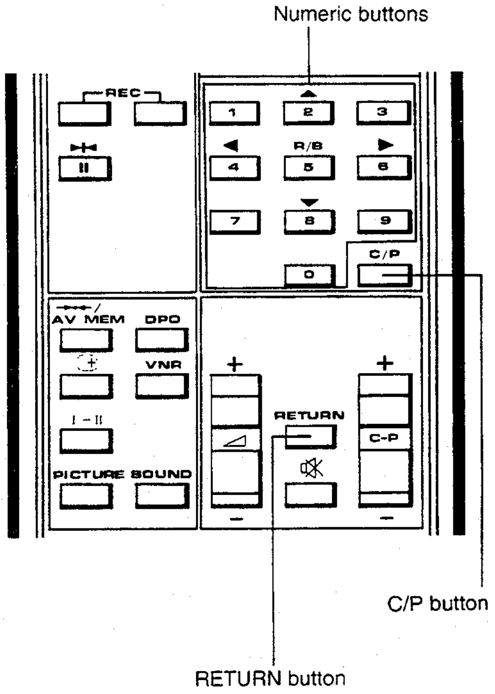


## To select a TV channel directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "PR" appears, press the C/P button to select "CH".
   **Example:**

| | |
|---|---|
| To select CH 9 | Press 9 (or press 0, then 9) |
| To select CH 59 | Press 5, then 9 |
| To select CH 20 | Press 2, then 0 |

***NOTE:***
- *When selecting a two-digit channel number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the channel number.*



## To select a program number directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "CH" appears, press the C/P button to select "PR".
   **Example:**

| | |
|---|---|
| To select PR 7 | Press 7 (or press 0, then 7) |
| To select PR 39 | Press 3, then 9 |
| To select PR60 | Press 6, then 0 |

***NOTE:***
- *When selecting a two-digit program number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the program number.*

**If you wish to watch the previously selected channel**
Press the RETURN button on the remote control unit. The TV channel or programmed channel selected immediately prior to the current one will appear.

To return to the original TV channel or programmed channel, press the RETURN button again.

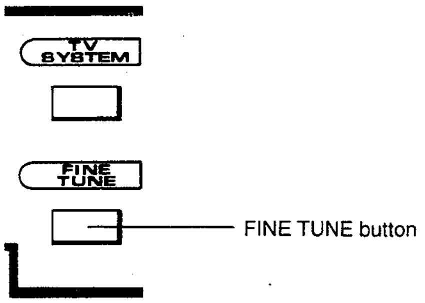
## Fine tuning

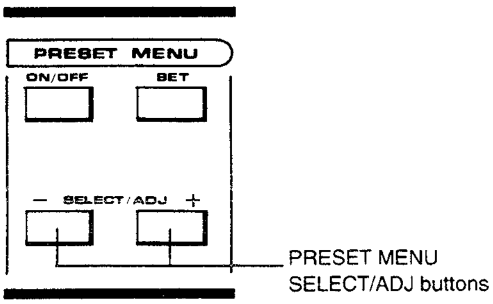
In areas with poor reception and in the case of stations where the transmission frequencies deviate from those given in the channel tables, it may prove necessary to improve the picture and sound quality by means of fine tuning.

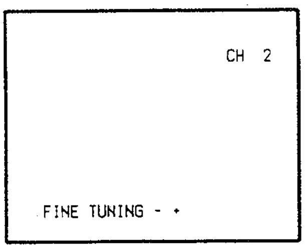
1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "PR" appears, press the C/P button to select "CH".
3. Press the FINE TUNE button. The fine tuning display will appear on the screen.
4. Press the PRESET MENU + or – button to adjust the tuning of the picture and sound as clearly as possible. The mark on the screen (+ or –) will flash while the button is pressed.
5. When fine tuning is completed:
   Press the FINE TUNE button again. The fine tuning display will disappear from the screen.

***NOTE:***

- *Fine tuning will be cancelled automatically when another TV channel or programmed channel is selected. Fine tuning is necessary if the selected TV program cannot be seen clearly or when distorted sound is heard.*


TV SYSTEM
FINE TUNE
FINE TUNE button


PRESET MENU
ON/OFF
SET
– SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons

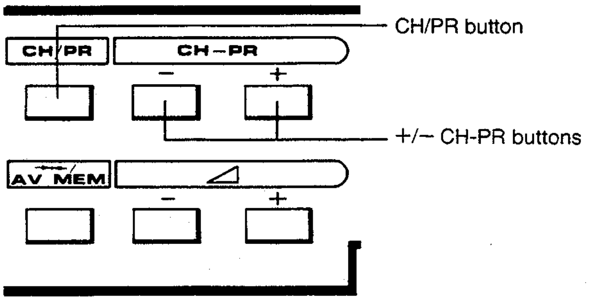

CH 2
FINE TUNING - +

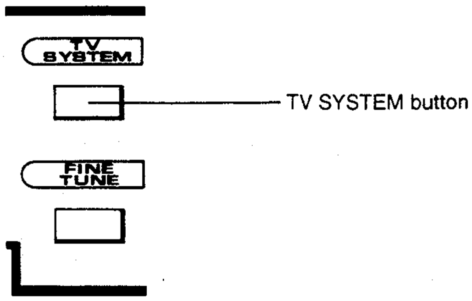
## TV system setting

This Projection TV can select the following TV systems while tuned in to a TV channel:
B/G, I, D/K, L, L' and M systems.

1. Press the "0" through "9" numeric buttons to input the desired channel ; if the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "CH" appears, press the C/P button to select "PR".
3. Press the TV SYSTEM button to select a TV system on the front panel. TV system display will appear on the screen in the following sequence:

→ B/G → I → L → L' → D/K → M

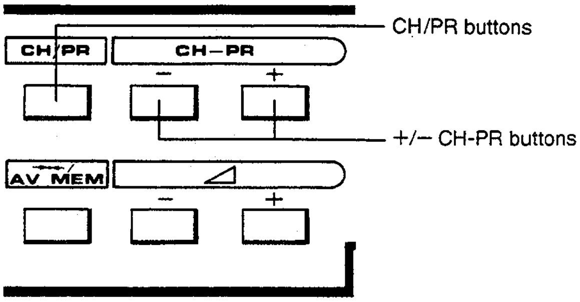

CH/PR button
CH/PR
CH–PR
–
+
+/– CH-PR buttons
AV MEM
–
+


TV SYSTEM
TV SYSTEM button
FINE TUNE

# TV CHANNEL SELECTION

## Channel table selection

This Projection TV tuner has 5 sets of channel tables (refer to pages 45 - 47 for details).
You can select the most suitable channel table for your area for watching TV programs.

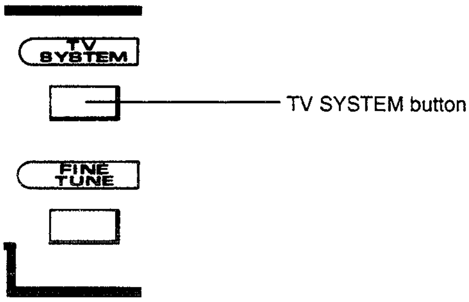

CH/PR
CH–PR
–
+
AV MEM
–
+
CH/PR buttons
+/– CH-PR buttons

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
The selected number appears on the screen, along with "CH" (channel) or "PR" (program).

2. If "PR" appears, press the C/P button to select "CH".

3. Press the TV SYSTEM button on the panel. Channel table display will appear on the screen in the following sequence:

┌ Table A → Table B → Table C → Table D → Table E ┐
└─────────────────────────────────────────────────┘


TV SYSTEM
FINE TUNE
TV SYSTEM button

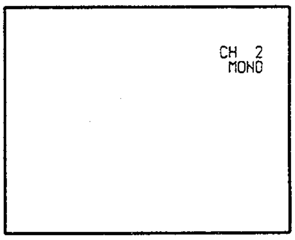
# SOUND AND VIDEO MODE SELECTION

This projection TV incorporates the follwing tuner STEREO SYSTEMS:

1) GERMAN/CCIR/A2 ANALOG 2 CARRIER SYSTEM (B/G)
2) NICAM DIGITAL STEREO (B/G,I)
3) MTS (M)

## Selecting dual TV sound program

If the TV system is set to B/G, CCIR 2 carrier analog system can be decoded when broadcasted. You can select stereo or monaural sound and original or second language audio while watching a TV program.
If STEREO appears on the screen for approximately 4 seconds:
The program is being broadcast in stereophonic sound.



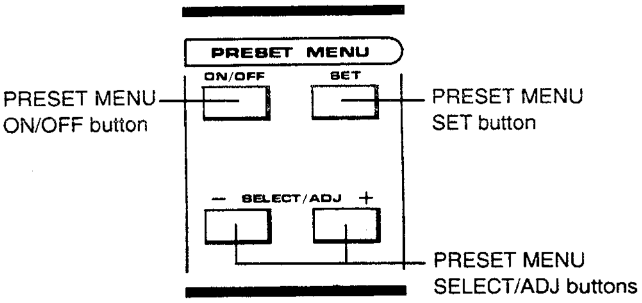
***NOTE:***

- *The TV sound decoder will select stereo sound or monaural sound automatically, according to the sound mode of the TV program.*

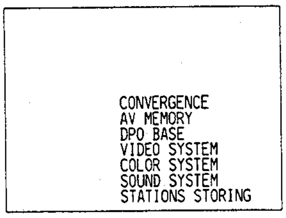
## Selecting monaural sound

If you wish to listen to monaural sound while a stereo sound program is being received; or if you hear a lot of static while receiving a stereo sound program.

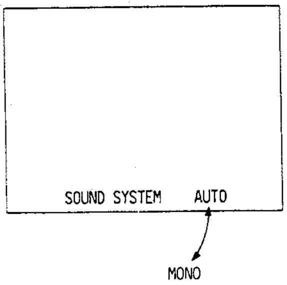
1. Turn the Projection TV on and select a TV station.
2. Press the PRESET MENU ON/OFF button to turn the operation menu on.
   Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until SOUND SYSTEM turns red, and then press the PRESET MENU SET button.
4. Press the PRESET MENU SELECT/ADJ buttons to select SOUND SYSTEM MONO.
5. After selecting the sound system, press the PRESET MENU SET button to memorize the setting.
6. Press the PRESET MENU ON/OFF button to remove the preset menu from the screen.


PRESET MENU
ON/OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
– SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons

**■ Preset Menu**


CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING

**■ Sound System selection**

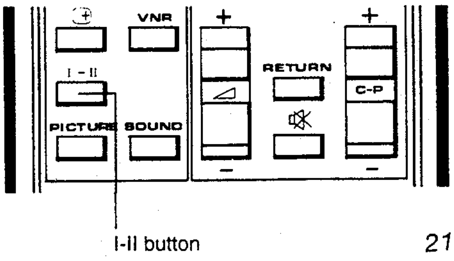

SOUND SYSTEM AUTO
MONO

### Dual sound reception

**If DUAL I appears on the screen:**
The program is being broadcast in two languages. You can select between the original and second language audio signals by pressing the I - II button.
The switching sequence is as follows:

DUAL I (original language) → DUAL II (second language) → DUAL I/II (original and second language)

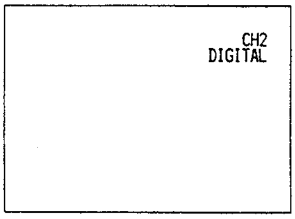
***Notice:***
*It takes (several) 4 ~ 5 sec approx for MONO/STEREO and MONO/DUAL switching for CCIR system when sound system in PRESET MENU is set to AUTO.*


VNR
I - II
PICTURE
SOUND
RETURN
C-P
+
–
I-II button

## SOUND AND VIDEO MODE SELECTION

### NICAM system mode setting

If the TV system is set to B/G or I, NICAM DIGITAL SOUND can be received.
In some countries and/or with some stations, the television sound is broadcast using the digital NICAM system, instead of the conventional analog stereo sound system.



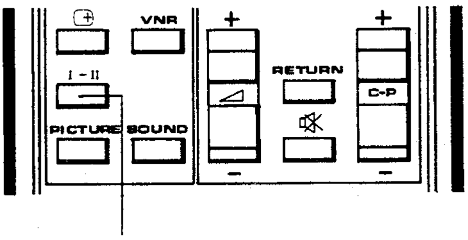
If DIGITAL STEREO appears on the screen for approximately 4 seconds:
The program is broadcast in NICAM stereophonic sound.
If DIGITAL appears on the screen for approximately 4 seconds:
The program is only broadcast in NICAM monaural sound.

***NOTE:***
- *If the SOUND SYSTEM mode is selecting the SOUND SYSTEM AUTO, the Projection TV will automatically select the digital sound system instead of conventional sound system.*

The NICAM sound may be disturbed by hissing or crackling noises due to a weak station signal. This interference can be eliminated by switching over from NICAM to analog (conventional) FM mono reproduction.
In this case, set the SOUND SYSTEM to MONO.
MONO.

### NICAM Dual sound reception

If DIGITAL I appears on the screen:
The program is broadcast in two NICAM languages. You can select between the original language and second language digital audio signals by pressing the I - II button.



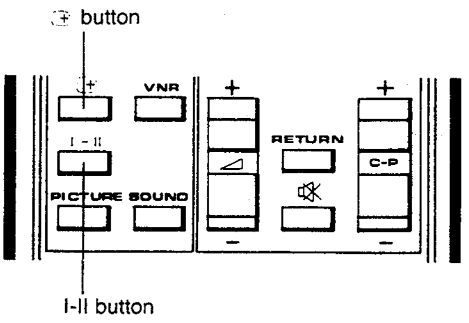
I-II button

Selecting second language
Press the I - II button. DIGITAL II will appear on the screen.
Press the I - II button again. DIGITAL I / II is selected.
Press the I - II button three times to return to the original language of the broadcast. DIGITAL I will reappear on the screen.
The switching sequence is as follows:

→DIGITAL I → DIGITAL II → DIGITAL I/II

# MULTI-CHANNEL TV SOUND (MTS)

If the TV system mode is set to M., Multichannel TV sound system can be received.
A multichannel TV sound decoder is built into the Projection TV. This MTS decoder permits stereo and SAP sound reception (SAP is a "second audio program" often used for a second language). The MTS decoder is only effective if the broadcast includes stereo or SAP signals.



## Stereo reception

If STEREO appears on the screen for approximately 4 seconds, the program is broadcasted in stereohonic sound. This decorder will select automatically between monaural and stereo according to the signals received.

## Monaural reception

If you hear a lot of static while receiving the stereo TV program, set the SOUND SYSTEM to SOUND SYSTEM MONO mode.

## SAP (Second Audio Program) reception

TV stations have the option of broadcasting a second audio program (SAP) signal. This additional sound channel accompanies another monaural signal or stereo signal. However, the SAP sound itself is in monaural.

Use the I - II button to switch to the MAIN/SAP setting if you wish to hear "second audio program" sound (at the MAIN/SAP setting, the SAP sound will come from the right loudspeaker while the left loudspeaker produces the main sound signal).
You will still hear stereo or monaural sound when there is no SAP signal.

***NOTE:***

- *Broadcast stereo and SAP reception operate in accordance with the Broadcast Television Systems Committee (BTSC) standard only. Stereo audio transmission from CATV (Cable television) systems can vary from area to area and may not be compatible with the BTSC standard. Check with your local cable company for specific compatibility requirements.*

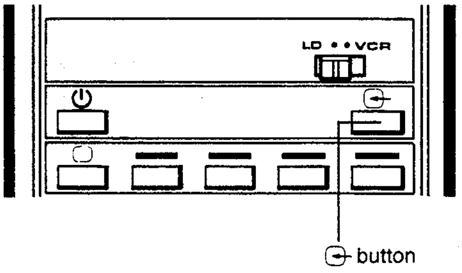
### Audio Reception Mode Display (selected by the I-II button) for MTS

| Broadcasted mode<br>Mode selected | | MONO + SAP | STEREO + SAP |
|---|---|---|---|
| MAIN | Display | CH 10<br>MAIN | CH 10<br>STEREO (SAP) |
| | REPRODUCTION mode | MONO (MAIN) | L and R |
| SAP | Display | CH 10<br>SAP | CH 10<br>SAP (ST) |
| | REPRODUCTION mode | SAP | SAP |
| MAIN/SAP | Display | CH 10<br>MAIN/SAP | CH 10<br>MAIN/SAP (ST) |
| | REPRODUCTION mode | L: MONO (MAIN)<br>R: SAP | L: MONO (MAIN)<br>R: SAP |
| MONO | Display | CH 10<br>MONO | CH 10<br>MONO |
| | REPRODUCTION mode | MONO | MONO |

# ADDITIONAL OPERATIONS

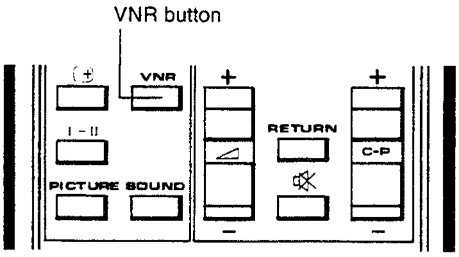
## Input source selection

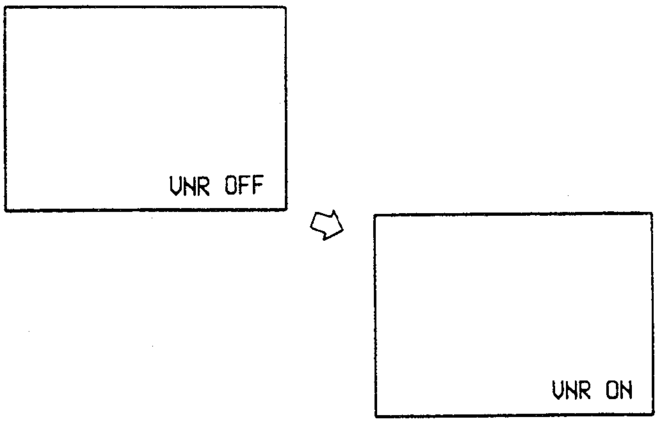
**To select video input source step by step:**
Press the ⊖ button on the control panel or the remote control unit repeatedly until the desired input source appears on the screen.


LD • • VCR
⊖ button

## VNR (Video Noise Reduction) system operation

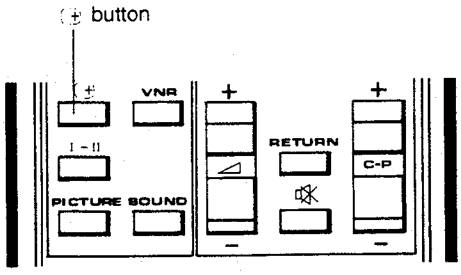
**To improve picture quality with VNR while watching a TV program or prerecorded video cassette tape playback**
VNR system will reduce noise contained in the video signal and improve the picture quality of TV programs or video tape playback pictures.
Press the button once to display the VNR mode (VNR ON or VNR OFF) on the screen, then press the button once or twice to select either VNR ON or VNR OFF.


VNR button
VNR
I - II
PICTURE
SOUND
RETURN
C-P
+
–


VNR OFF
VNR ON

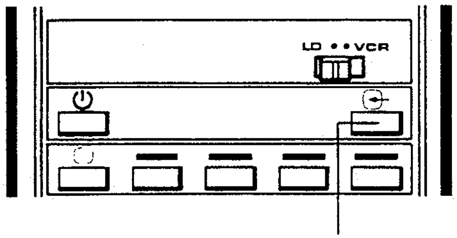
## To confirm picture and sound information on the screen

Press the ⁝± button to display the information on the screen. Four seconds later, the information display will disappear.


⁝± button
VNR
I - II
PICTURE
SOUND
RETURN
C-P
+
–

## To record from video equipment connected to the AV-1, AV-3 or AV-4 terminals to a video cassette recorder connected to the AV-2 terminals

(or record from the AV-1, AV-2 or AV-3 terminals to a video cassette recorder connected to the AV-4 terminals)



⊖ button

1. Turn the power on, and select the video source for playback by pressing the ⊖ button of the remote control unit.

2. Connect the recording video cassette recorder to the AV-2 connector.
   * If you wish to use the AV-4 terminals, connect the recording video cassette recorder to the AV-4 terminals.

3. Set the video cassette recorder to recording mode, then start playback of the video equipment connected to the AV-1, AV-3 or AV-4 connector.
   * If you are connecting the recording video cassette recorder to the AV-4 terminals, select an input source from the AV-1, AV-2 or AV-3.

***NOTE:***

- *When you switch the input source to AV-2 or AV-4 during recording, recording signals are not output from the AV-2 connector and AV-4 terminals.*

# PICTURE AND SOUND ADJUSTMENT

The remote control unit has a PICTURE button and a SOUND button. These buttons allow you to adjust color, tint, contrast, brightness, sharpness, bass, treble, and balance.

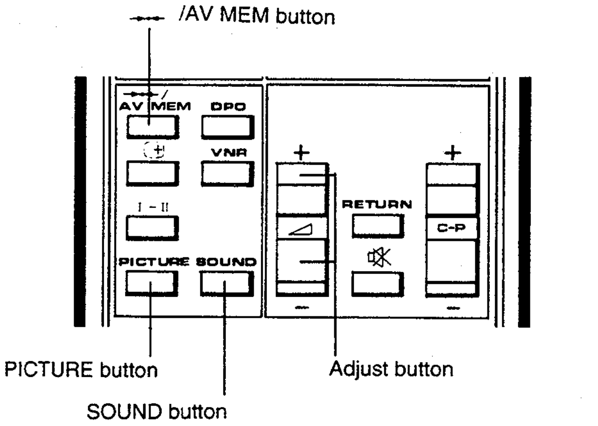
1. Press the PICTURE button or SOUND button until the item to be adjusted appears.
2. Press the volume + button to raise the value of the selected item. Press the — button to lower it.

Set each item to any value you like; the current value is shown on the screen.

Picture and sound adjustment mode will be cancelled approx. 4 seconds after the + or — button is released.

***NOTE:***

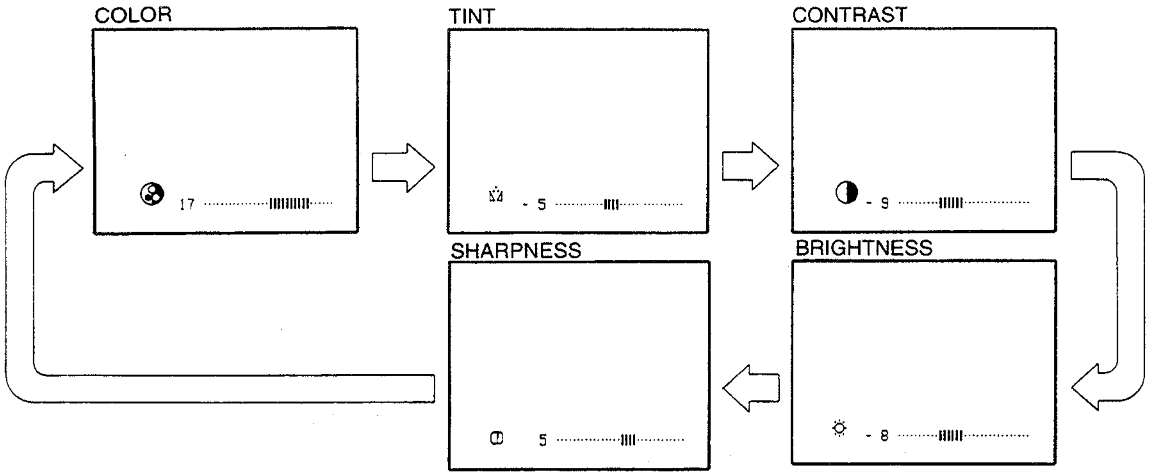
- *The Projection TV has been adjusted before shipping. Please make additional adjustments to suit your personal taste.*
- *These picture and sound quality settings can be stored in the AV MEMORY preset memory. See AV MEMORY on page 30.*
- *To return to the standard settings initially set at the factory, simply press the -•- /AV MEM button so that the screen shows STANDARD.*
- *The ⊛ (Color), ◑ (Contrast) and ☼ (Brightness) adjustments cannot be selected while the DPO button is on. If you wish to adjust them, turn the DPO off.*



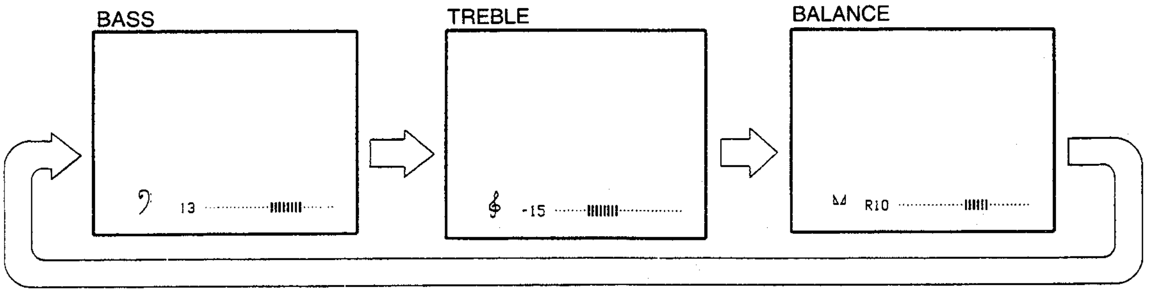
**Temporary AV Memory recall**

When the display disappears from the screen, the existing AV settings will be stored in the temporary memory mode. In this mode, the Projection TV's temporary AV memory settings will be restored when the power is turned on.

## SCREEN INDICATIONS FOR PICTURE ADJUSTMENT



## SCREEN INDICATIONS FOR SOUND ADJUSTMENT



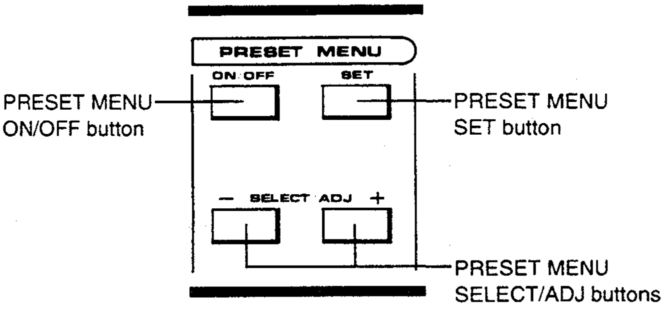
***NOTES:***

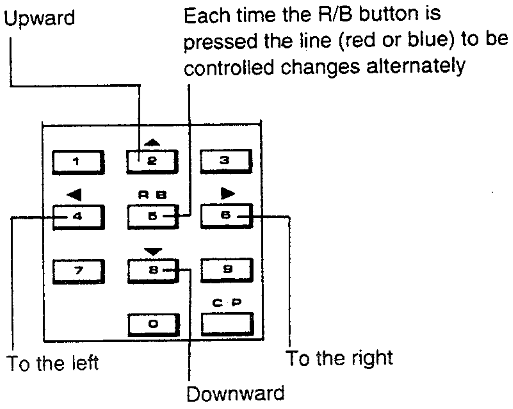
- *If the color seems abnormal but cannot be fixed by color or tint adjustment, then you may need to align the color convergence (see page 27).*
- *Bass and treble tone control adjustment range will be shown as a value between –32 and +31, and balance adjustment range will be shown as a value between L32 and R31.*
- *During the DPO adjustment and AV memory operation, 'DPO', 'STD', 'AV-1', 'AV-2', 'AV-3' or 'AV-4' will be shown on the left side of the screen. When the tone or picture quality controls are adjusted, these displays (except for the 'DPO' display) will disappear from the screen.*
- *The ⚖ (Tint) adjustment only appears when the NTSC or 4.43NTSC color system is selected. Otherwise it will disappear from the picture adjustment menu.*

# HOW TO ALIGN COLOR CONVERGENCE

This Projection TV uses three separate picture tubes — a red, a green, and a blue tube. The red, green and blue images are projected onto the screen where they converge to form a full color picture. If they do not converge correctly, then you will see colored borders around the images.
However, convergence may drift over time or if you move the Projection TV.
Follow the steps below if color convergence alignment is needed.

1. Turn on the power and select an active channel. Wait a moment for the picture to stabilize.
2. Press the PRESET MENU ON/OFF button on the control panel. The monitor screen displays the menu (CONVERGENCE, AV MEMORY, DPO BASE, VIDEO SYSTEM, COLOR SYSTEM, SOUND SYSTEM and STATIONS STORING).
   Make sure that "CONVERGENCE" is displayed in red. If not, press the PRESET MENU SELECT/ADJ buttons until "CONVERGENCE" turns red.
3. Press the PRESET MENU SET button on the control panel. If color convergence is correct, there will be one vertical white line and one horizontal white line, as in figure 1.
4. If you see separate colored lines (Fig. 2 to 4), use the R/B, ◀, ▶, ▲ and ▼ buttons on the remote control unit to make the red and blue lines disappear into the other lines.
   Each time the R/B button is pressed, the line to be controlled (red or blue) alternates.
   Pressing the ◀ button moves the vertical line to the left, while pressing the ▶ button moves the vertical line to the right.
   Pressing the ▲ button moves the horizontal line upward, while pressing the ▼ button moves the horizontal line downward.
   In figure 2, for example, press the R/B button to control the red line, and then press the ◀ button until the red line converges. Press the R/B button again to control the blue line, and then press the ▼ button until the blue line converges.
   Convergence is correct when all three colors (red, green and blue) converge, producing single white line.
5. Press the PRESET MENU ON/OFF button when convergence is correct.


PRESET MENU
ON·OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
– SELECT ADJ +
PRESET MENU SELECT/ADJ buttons


Upward
Each time the R/B button is pressed the line (red or blue) to be controlled changes alternately
1
2
3
◀
R B
▶
4
5
6
▼
7
8
9
C P
0
To the left
To the right
Downward

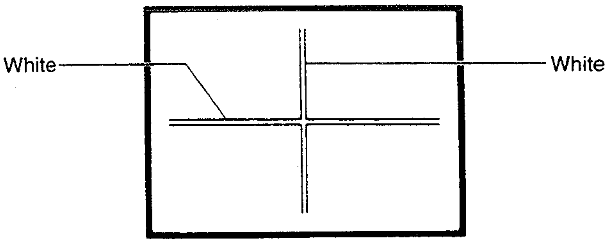

White
White

Fig. 1 Correctly aligned

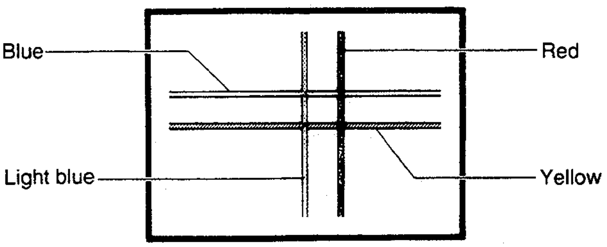

Blue
Red
Light blue
Yellow

Fig. 2 Horizontal and vertical misalignment

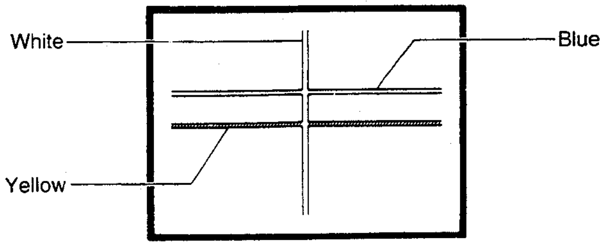

White
Blue
Yellow

Fig. 3 Vertical misalignment

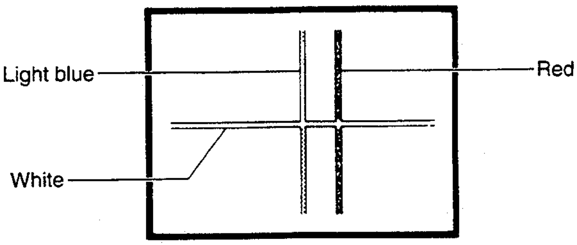

Light blue
Red
White

Fig. 4 Horizontal misalignment

## HOW TO ALIGN COLOR CONVERGENCE

### Color convergence alignment without using the remote control unit

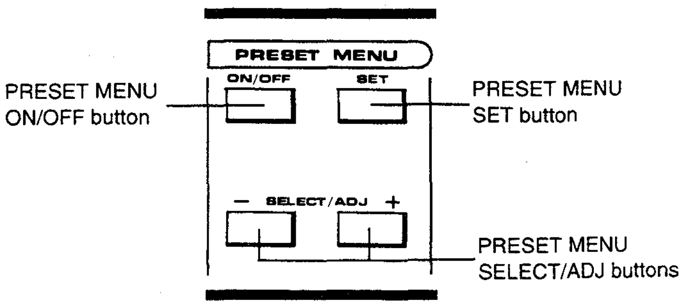
Color convergence adjustment can be performed by either the operation buttons of the remote control unit as described in operation 4 of the above procedures, or the PRESET MENU SELECT/ADJ buttons and PRESET MENU SET button on the control panel as described below:

① **Press the PRESET MENU SET button to select the adjustment mode. The adjustment modes appear in the following order:**

- Convergence adjustment test pattern and arrow will appear on the screen accordingly.

Red-horizontal adjustment → Red-vertical adjustment → Blue-horizontal adjust → Blue-vertical adjustment → (*) → Red-horizontal adjustment

* Alignment proof mode; selected image only appears.



● **Use the PRESET MENU SELECT/ADJ buttons as follows:**

During Red or Blue Vertical adjustment

Press the + button to move the horizontal line upwards.
Press the – button to move the horizontal line downwards.

During Red or Blue Horizontal adjustment

Press the + button to move the vertical line to the right.
Press the – button to move the vertical line to the left.

# DPO ADJUSTMENT

When the DPO (Dynamic Picture Optimizer) switch is on, the Projection TV automatically adjusts the contrast, brightness and color to match room lighting conditions. This is done according to factory preset specifications which ordinarily do not need to be changed. However, if the DPO is giving you too bright or too dim a picture, you can change its response by following these directions.

DPO adjustment is necessary under the following conditions.

| Room conditions | TV screen condition | Adjustment |
|---|---|---|
| Dim light | Too much brighter than room lighting | DPO DARK Adjustment |
| Bright light | Dark TV screen (Picture cannot be seen clearly) | DPO LIGHT Adjustment |

1. Under dim or bright room lighting conditions, watch a TV show, video tape or video disc.
2. Turn on the PRESET MENU ON/OFF button and press the PRESET MENU SELECT/ADJ buttons until the DPO BASE display turns red.
3. Press the PRESET MENU SET button. "DPO LIGHT" and "DPO DARK" appear on the screen.
4. Press the PRESET MENU SELECT/ADJ buttons to select the adjustment as follows:
   Bright room → select DPO LIGHT
   Dim room → select DPO DARK
5. Press the PRESET MENU SET button. "⊛ (Color)", (" ◑ (Contrast)" and " ☼ (Brightness)") appears on the screen.
6. Press the PRESET MENU SELECT/ADJ buttons to adjust the " ⊛ (Color)"
7. Repeat steps [5] and [6] to adjust the other two adjustment items " ◑ " (Contrast) and " ☼ " (Brightness).
8. Press the PRESET MENU ON/OFF button after all adjustments are completed.

### On the DPO system and AV MEMORY system

When the DPO system is turned off, the Projection TV picture will be set according to its original picture data (reference AV MEMORY data, memorized AV MEMORY 1, 2, 3 or 4 data).

When the DPO system is turned on, the Projection TV picture will be set according to a combination of the original AV MEMORY data (reference AV MEMORY data, AV MEMORY 1, 2, 3 or 4 data) and the DPO adjustment data.

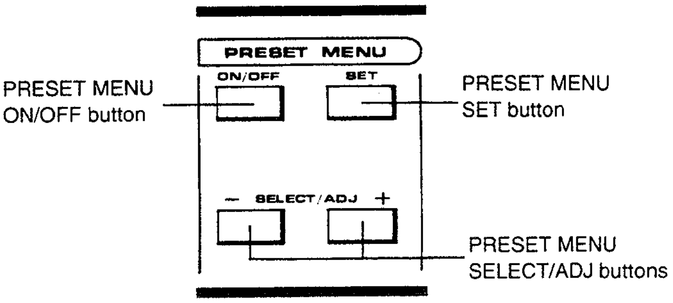
**Attention**

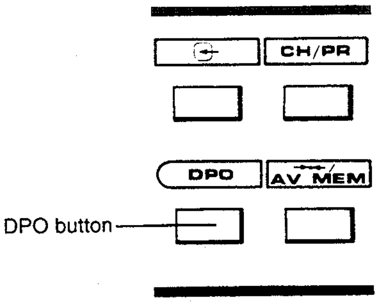
The following picture adjustments should not be performed when the DPO system is engaged.

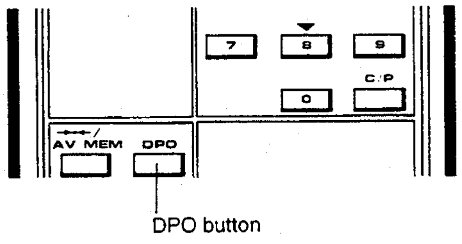
They are automatically adjusted to the proper level by the DPO microcomputer according to lighting conditions when the system is turned on.

If you wish to adjust these items, turn the DPO system off before making adjustments.

- ⊛ (COLOR)
- ◑ (CONTRAST)
- ☼ (BRIGHTNESS)

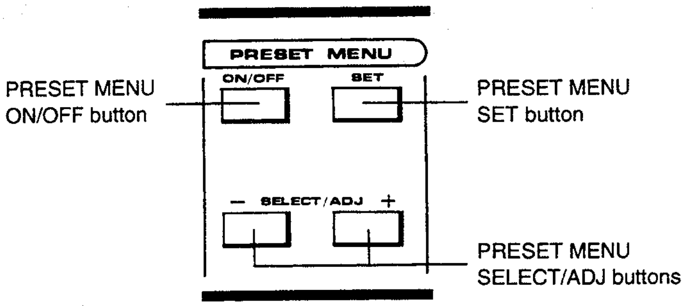






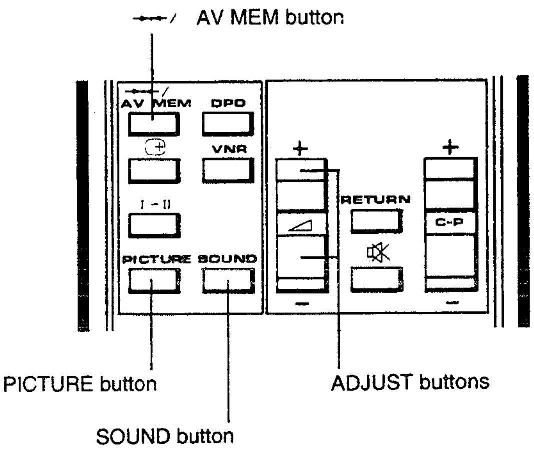
# AV MEMORY

After making adjustments, you can store your picture and tone quality settings in the Four AV MEMORY presets. Follow the procedure below.


PRESET MENU
ON/OFF
SET
− SELECT/ADJ +
PRESET MENU ON/OFF button
PRESET MENU SET button
PRESET MENU SELECT/ADJ buttons

## Storing a Setting

1. Watch a TV show, video tape or video disc.
2. Adjust the picture and tone using the PICTURE button, SOUND button and ADJUST buttons.
3. Turn on the PRESET MENU ON/OFF button, and press the PRESET MENU SELECT/ADJ buttons until the AV MEMORY display turns red.
4. Press the PRESET MENU SET button.
5. Press the PRESET MENU SELECT/ADJ buttons to select the AV memory (AV MEMORY 1, 2, 3 or 4) in which the setting is to be stored.
6. Press the PRESET MENU ON/OFF button to store the setting in AV memory and to return to normal operation.


— / AV MEM button
AV MEM
DPO
VNR
I - II
RETURN
C-P
PICTURE
SOUND
+
+
−
−
PICTURE button
ADJUST buttons
SOUND button

## Recalling a Setting

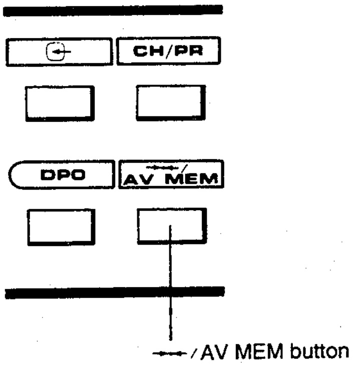
Press the — /AV MEM button on the remote control unit.
Each press of the — /AV MEM button moves the selection from STANDARD to AV MEMORY 1, to AV MEMORY 2 to AV MEMORY 3, to AV MEMORY 4 and then back to STANDARD again.
(Press the button while the previous legend is still on the screen. Otherwise, it will return to the STANDARD setting.)

## Returning to the Standard Setting

Press the — /AV MEM button so that the screen shows STANDARD.

## Recalling a setting with the — /AV MEM button on the control panel

Press the — /AV MEM button repeatedly to recall a setting, as described above for the remote control operation buttons.


CH/PR
DPO
AV MEM
— /AV MEM button

***NOTE:***

- *Adjustments made to the AV memory, bass and treble tone, etc. will only affect the output from the (Audio output: Variable) jacks.*
  *All other signals output from the Projection TV will be unaffected. Only the original output signal is sent through the Projection TV output jacks.*

## On the AV Memory assignment

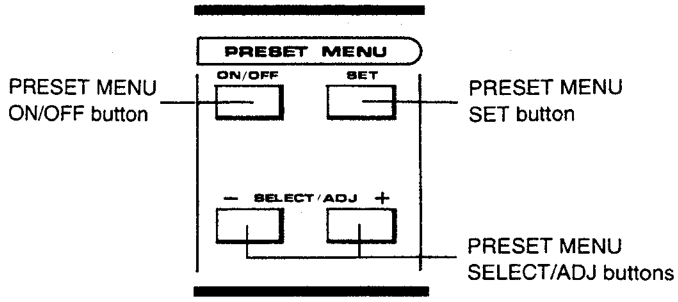
AV memory can be assigned to a selected input source: TV, AV-1, AV-2, AV-3 or AV-4. For example, the AV memory settings for TV can be stored in the STANDARD mode, AV3 settings in AV MEMORY 1, and AV1 settings in AV MEMORY 2.
To select the desired input source press the ⊖ button, then press the — /AV MEM button repeatedly to recall the desired settings.

# SELECTING THE COLOR SYSTEM

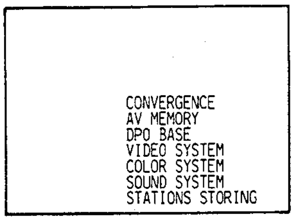
This Projection TV can display an NTSC 4.43 (Modified north American)-based color video source if your video equipment also has this feature. You can watch NTSC 4.43-based prerecorded tapes on the Projection TV. The Projection TV will select the color mode automatically between PAL, SECAM, NTSC and NTSC 4.43 depending on the playback video source.

1. Press the input selector for the video source you wish to watch, or press the numeric buttons to select the desired TV channel.
2. Press the PRESET MENU ON/OFF button to turn on the preset menu display.
3. Press the PRESET MENU SELECT/ADJ buttons repeatedly until COLOR SYSTEM turns red.
4. Press the PRESET MENU SET button to select the color system setting.
5. Press the PRESET MENU SELECT/ADJ button to select the desired color system; PAL, SECAM, NTSC or 4.43 NTSC. Select the AUTO color system mode if you wish to watch the PAL, SECAM, NTSC or 4.43 NTSC systems without having to perform any color system selecting operations.
6. After selecting the color system mode, press the PRESET MENU SET button to memorize the mode.
7. Press the PRESET MENU ON/OFF button to remove the preset menu from the screen.

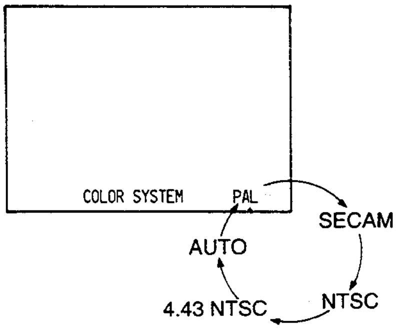
***NOTE:***
- *Poor signal quality prerecorded tapes will cause unstable picture reproduction and an off-color picture will be seen.*
  *This is not a malfunction of the Projection TV.*


PRESET MENU
ON/OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
– SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons

### ■ Preset menu


CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING

### ■ Color system mode selection


COLOR SYSTEM
PAL
SECAM
NTSC
4.43 NTSC
AUTO

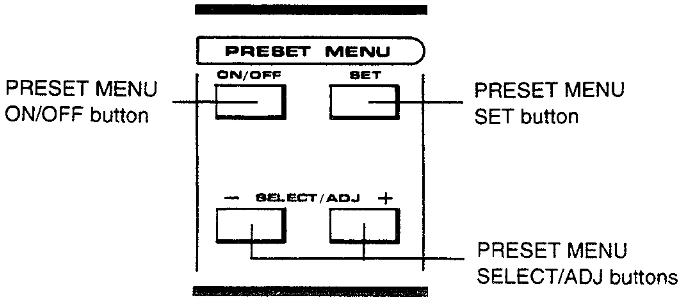
# VIDEO SYSTEM SETTING

This operation will select the input source of the AV-1 and AV-2 EURO connectors and AV-3 and AV-4 RCA pin jacks of the Projection TV. This selection determines what video input system will be used when the AV-1, AV-2, AV-3 or AV-4 is selected. If your connected video equipment has S-VIDEO features, select S-VIDEO video input system for the best picture quality reception. This Projection TV offers the following video input systems.

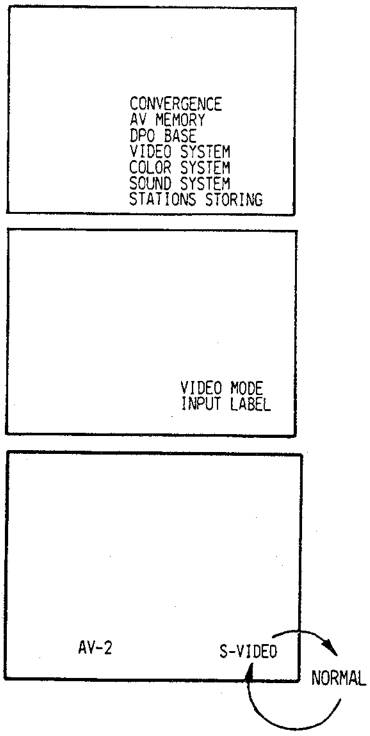
**S-VIDEO:** Separated Luminance and Chrominance video signal input.
**NORMAL:** Standard composite video signal input.

1. Turn on the power.
2. Press the ⊖ button to select the input source for which you wish to set the video input system.
3. Press the PRESET MENU ON/OFF button to display the preset menu on the screen.
4. Press the PRESET MENU SELECT/ADJ buttons repeatedly until VIDEO SYSTEM turns red.
5. Press the PRESET MENU SET button to select VIDEO SYSTEM.
6. Press the PRESET MENU SELECT/ADJ buttons until VIDEO MODE turns red.
7. Press the PRESET MENU SET button to select VIDEO MODE.
8. Press the PRESET MENU SELECT/ADJ buttons to select the desired video input system as follows:
   NORMAL: Composite (Mixed) video input system is selected.
   S-VIDEO: Separated luminance and chrominance video input system is selected.
9. After selecting the video input system, press the PRESET MENU SET button to memorize the setting.
10. Press the PRESET MENU ON/OFF button to remove the preset menu from the screen.

***NOTE:***
- *Most video equipment uses the composite video input system.*
- *When using AV-3 and AV-4 S-VIDEO terminals to connect video equipment, the S-VIDEO video mode must be selected.*



■ **Preset menu**



## RGB operating mode

This operating mode is provided for connection of satellite decoders, home computers, video games, interactive video text decoders, etc. Connect to the AV-1 socket.

If the other unit supplies an RGB signal for internal or external synchronization using a switching voltage, you can assign the appliance in question to a Program Number 1-64 (for details, refer to the operating manual of the other unit).
If the other unit supplies an RGB signal for external synchronization using a switching voltage, you can assign the appliance in question to AV-1 (for details, refer to the operating manual of the other unit).
Before switching over from RGB to television mode, switch off RGB signal source.

# STATIONS STORING

Refer to the television channel table before using the TV stations storing feature.
See pages 45 to 47 "TV CHANNEL SELECTION."

1. Turn the Projection TV on and select a TV station.
2. Press the PRESET MENU ON/OFF button to turn the operation menu on. Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button.
4. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button. Press the PRESET MENU SELECT/ADJ button to select the desired program number. Selected program number will flash on and off, and then press the PRESET MENU SET button.
5. Press the PRESET MENU SELECT/ADJ buttons to select the TV channel as follows:
   Use the + button to increase channel number.
   Use the – button to decrease channel number.
6. Select a channel table under which you wish to store stations by pressing the TV SYSTEM button repeatedly.
7. Press the PRESET MENU SET button to store the tuned-in station.
   If you wish to change the TV system, press the TV SYSTEM button repeatedly until the desired TV system appears on the screen. If you wish to select D/K system, press the TV SYSTEM button repeatedly until D/K appears on the screen, for example.
8. Press the PRESET MENU SET button to store the TV channel and TV system.
   If you wish to continue the operation, repeat steps 5 thru 8 above.
9. Press the PRESET MENU ON/OFF button when you finish TV station storing.

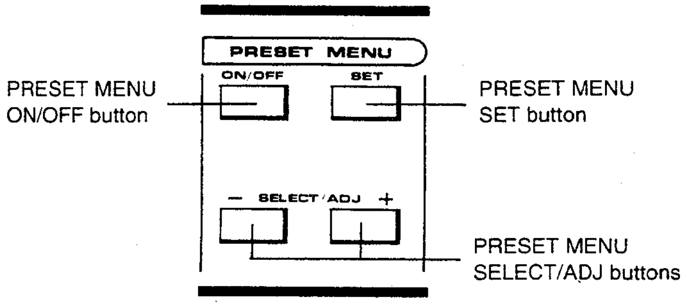
### If you wish to replace or reenter a TV channel

Repeat steps 2 thru 9 above.

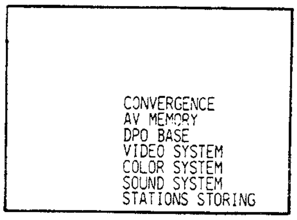
### If you wish to directly enter the channel number during TV station presetting

Use the numeric buttons of the remote control unit instead of the PRESET MENU SELECT/ADJ buttons of the Projection TV.

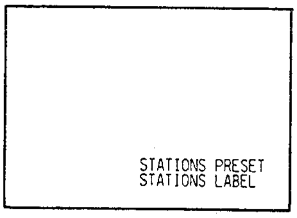
1. After setting the Projection TV in TV station presetting mode, follow steps 1 thru 4 above.
2. Press the numeric buttons as follows:
   **Example**
   **To preset channel 8:** Press the 8 button.
   **To preset channel 40:** Press the 4, then the 0 (zero) buttons.
   **To preset channel 33:** Press the 3 button twice.
3. Press the PRESET MENU SET button to store the TV channel.



## ■ Preset Menu

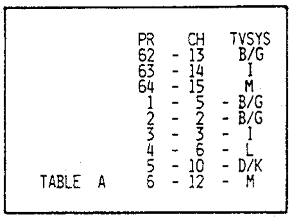


```
CONVERGENCE
AV MEMORY
DPO BASE
VIDEO SYSTEM
COLOR SYSTEM
SOUND SYSTEM
STATIONS STORING
```



```
STATIONS PRESET
STATIONS LABEL
```

## ■ Stations Storing Menu



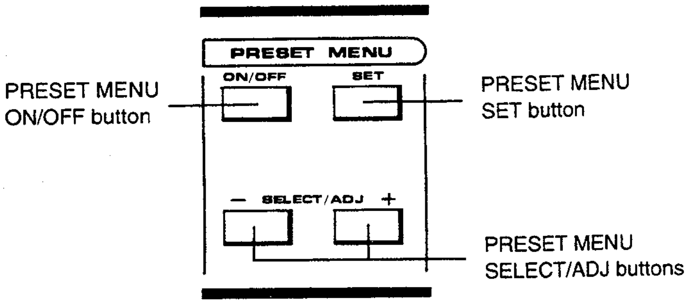
```
                PR    CH   TVSYS
                62  - 13    B/G
                63  - 14     I
                64  - 15     M
                 1  -  5  - B/G
                 2  -  2  - B/G
                 3  -  3  -  I
                 4  -  6  -  L
                 5  - 10  - D/K
   TABLE  A      6  - 12  -  M
```

## STATIONS STORING

### If you wish to delete a programmed TV channel

1. After setting the Projection TV to the TV station presetting mode, follow steps 1 thru 4 on page 33.
2. Press the 0 (zero) button, or press the PRESET MENU SELECT/ADJ buttons until “0” appears on the channel display.
3. Press the PRESET MENU SET button to delete the TV station.

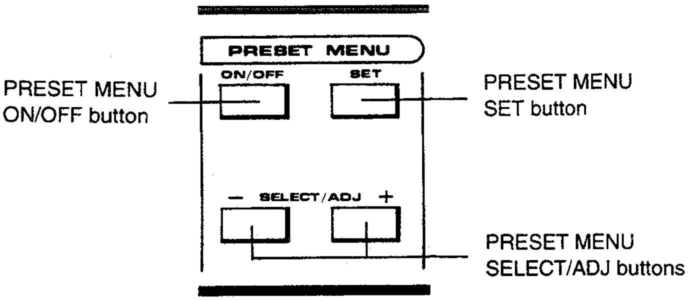
**To program a number after it has been deleted from the memory:**
Reenter the channel under the deleted program number.
Refer to page 33.

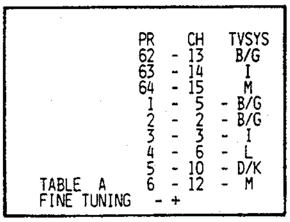

PRESET MENU
ON/OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
– SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons

### Fine tuning for the programmed TV channels

You can store the precise tuning setting of programmed TV channels by following the instructions below:
In areas with poor reception and in the case of stations where the transmission frequencies deviate from those given in the channel tables, it may prove necessary to improve the picture and sound quality by fine tuning.

1. Press the “0” through “9” numeric buttons to input the desired channel you wish to finely tune it.
2. Press the PRESET MENU ON/OFF button to turn the operation menu on. Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button. Press the PRESET MENU SELECT/ADJ buttons until STATIONS PRESET turns red, and then press the PRESET MENU SET button. The selected program number will flash on and off.
4. Press the FINE TUNE button. The fine tuning display will appear on the screen.
5. Press the + or – button repeatedly until the picture and sound are as clear as possible.
6. When the fine adjustment is completed:
   Press the FINE TUNE button or PRESET MENU SET button again.

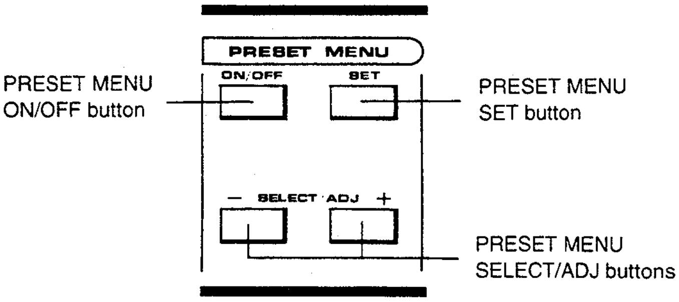

PRESET MENU
ON/OFF
SET
PRESET MENU ON/OFF button
PRESET MENU SET button
– SELECT/ADJ +
PRESET MENU SELECT/ADJ buttons



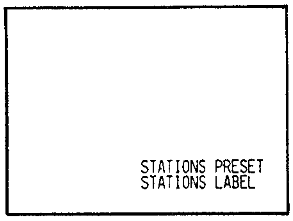
```
                 PR    CH   TVSYS
                 62  - 13    B/G
                 63  - 14     I
                 64  - 15     M
                  1  -  5  - B/G
                  2  -  2  - B/G
                  3  -  3  -  I
                  4  -  6  -  L
                  5  - 10  - D/K
TABLE  A          6  - 12  -  M
FINE TUNING     - +
```

# USING THE STATION LABEL FUNCTION

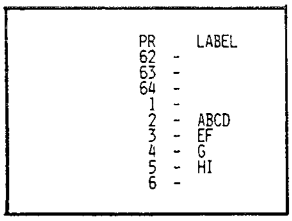
The station label function can be used to label each station with a call sign, network name, etc. For example, 'ABCD' can be displayed on the screen when the 'PR 1' is selected. The station label can be up to 4 characters long using the 52 characters, including __ (space) listed below.



1. Turn on the Projection TV and select a PR number you wish to label.
2. Press the PRESET MENU ON/OFF button to turn on the operation menu.Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button.
4. Press the PRESET MENU SELECT/ADJ buttons until STATIONS LABEL turns red, and then press the PRESET MENU SET button. Selected program number turns red.
   Press the PRESET MENU SET button.
5. Press the PRESET MENU SELECT/ADJ buttons to select the desired character.
   * Press the + or – button repeatedly until the desired character appears.
6. Press the PRESET MENU SET button to set the selected character.
7. If you wish to select additional characters, repeat steps 5 and 6.
8. Press the PRESET MENU ON/OFF button once when you finish inputting all of the desired station labels.



```
STATIONS PRESET
STATIONS LABEL
```



```
PR    LABEL
62 -
63 -
64 -
 1 -
 2 -  ABCD
 3 -  EF
 4 -  G
 5 -  HI
 6 -
```

***NOTES:***

- *The following 52 characters, including __ (space), can be selected.*

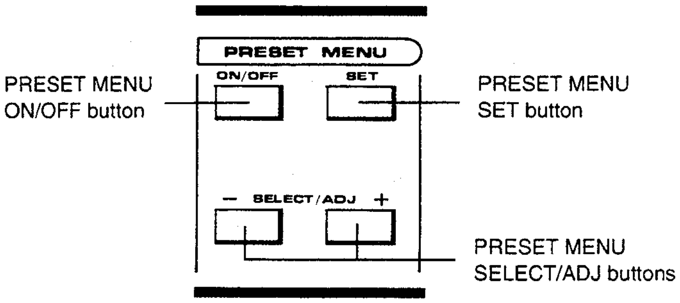
ABCDEFGHIJKLMNOPQRSTUVWXYZÄÖÜÆØÅÑÉÇ0123456789:<> – . , □

Space

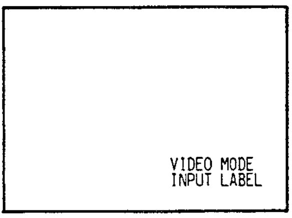
- *Be sure to press the PRESET MENU SET button after selecting the character.*

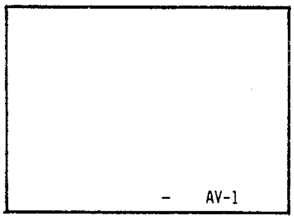
# HOW TO RELABEL INPUT DISPLAYS

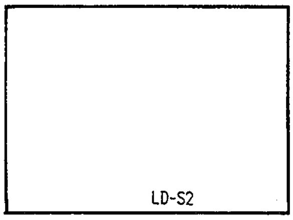
The input label function can be used to replace the input displays, such as AV-1 or AV-2, with the model numbers or model names of the equipment that are connected to the Projection TV. For example, you can display 'LD-S2' on the screen when selecting the AV-1 input source.
The input label can be up to 8 characters long using the 52 characters, including ＿ (space), listed below.



1. Turn on the Projection TV and select the input (AV-1, AV-2, AV-3 or AV-4) that you wish to replace with the model number of the equipment connected to the Projection TV.
   Example: Replacing the AV-1 display with model number 'LD-S2'.
2. Press the PRESET MENU ON/OFF button, and then press the PRESET MENU SELECT/ADJ buttons until the VIDEO SYSTEM display turns red, and then press the PRESET MENU SET button.
3. Press the PRESET MENU SELECT/ADJ buttons until the INPUT LABEL display turns red.
4. Press the PRESET MENU SET button. 'AV-1' will appear in the right-hand corner of the screen.
5. Press the PRESET MENU SELECT/ADJ buttons to select the desired character.
   * Press the + or – button repeatedly until the desired character appears.
6. Press the PRESET MENU SET button to set the selected character.
7. If you wish to select additional characters, repeat steps 5 and 6.
8. Press the PRESET MENU ON/OFF button once when you finish replacing the input labels.







You can display the model number by pressing the ⊖ button on the remote control unit or the front panel of the main unit.

***NOTES:***

- *The following 52 characters, including ＿ (space), can be selected.*

→ABCDEFGHIJKLMNOPQRSTUVWXYZÄÖÜÆØÑÉÇ0123456789:<> – . , □
Space

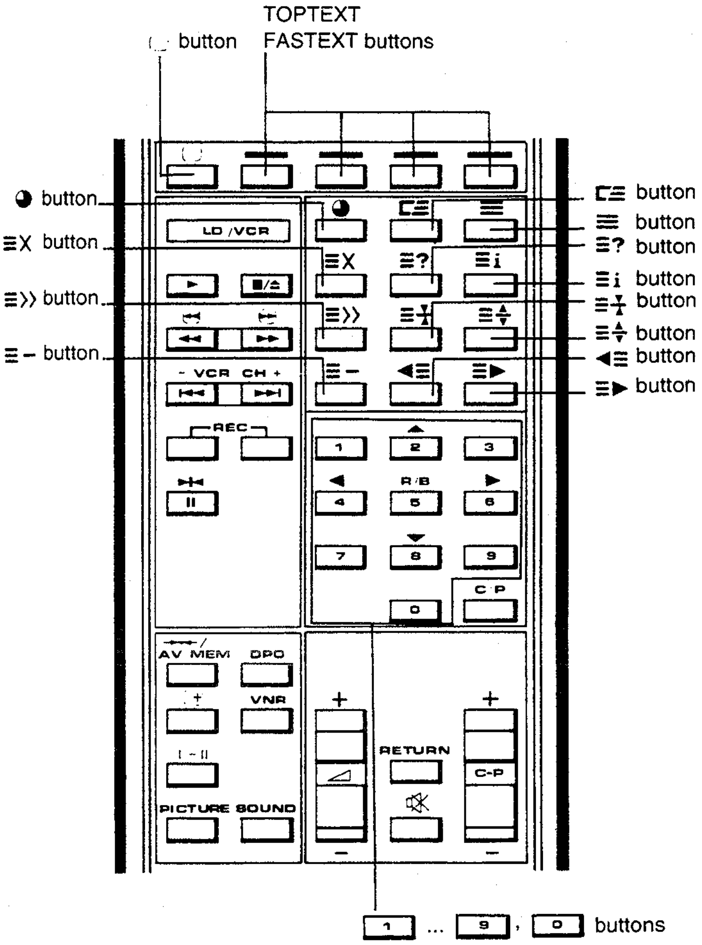
- *Make sure to press the PRESET MENU SET button after selecting the character.*

# TELETEXT FUNCTIONS

## What you need to know about the text mode

### Button functions

| | |
|---|---|
| ≡ | Switch over to the text program. |
| ▢ | Switch back to the TV program. |
| ≡i | Call up the overview page (list of contents). |
| ≡▶ | Browse forwards in the multipage memory. |
| ◀≡ | Browse backwards in the multipage memory. |
| ≡÷ | Double the character height on the top or bottom half pages. |
| ≡– | Return to normal character height. |
| ≡‡ | Halt and browse further in multiple pages. |
| ≡X | Call up TV picture in text mode. |
| ⊏≡ | Mix text and TV programs. |
| ≡? | Call up solutions. |
| ◑ | Enter a preselection page. |
| ≡›› | Switch over the multipage memory to multiple page mode. Operate this button only when a multiple page is being received. |
| TOPTEXT/ FASTEXT | Colored buttons for the TOPTEXT and FASTEXT systems. |



### Text functions

Text programs are given different designations in different countries, e.g. VIDEOTEXT or TELETEXT. The contents are sometimes called pages, sometimes panels.
In some countries text programs are broadcast in the TOPTEXT or FASTEXT system.
Text programs require a good antenna system. When reception conditions are poor, text pages may be received incompletely or not at all. For this reason, if you have a choice of stations for the same program, always choose the most powerful one.
Perform fine tuning at the Projection TV so as to ensure that you obtain the best possible TV reception. For details, see page 19.

Text programs are only transmitted together with a TV program or a test picture. Therefore, always proceed as follows:
**A** First select the TV program.
**B** Then switch over to the text program.

The text decoder of the Projection TV can store in memory several text pages simultaneously. The multipage memory allows you to call up adjacent text pages (such as news or program overviews) which may be related subjectwise, without appreciable waiting time, and also (with the TOPTEXT and FASTEXT systems) to select pages using a color menu.

TELETEXT functions do not operate immediately after turning on the power or changing the input mode.
A few seconds are required before operation can begin.

## TELETEXT FUNCTIONS

### The most important text functions

1 Switching over to the text program.
In order to switch over from TV to text program, press the ≡ button.

2 Calling up the list of contents.
Press the ≡i button for calling up the overview page as required. Any text pages that have been on the screen so far will be erased as soon as the text system has found the overview page.
Use the numeric buttons to select text pages, or follow the instructions given on pages 39 and 40 (for TOPTEXT programs), or the color menu (for FASTEST programs).
To utilize the other text functions, proceed in accordance with the instructions given on the following pages of this operating instructions manual.

3 Switching back to the TV program.
In order to switch back to TV reception, press the ▢ button. Now you can, for instance, switch over to another TV program, and then to its text program.

### Page selection

The individual text pages are selected by entering the corresponding page numbers.

4 Use the numeric buttons 1 to 9 and 0 (zero) to enter the three-digit code for the desired page. You will see your input on the left of the header line, and next to it on the right the page number run-through. Run-through will not commence until the complete code has been entered.
The color of the page counter in the header line will change to white as soon as the selected page appears on the screen.
Should it not be possible to enter the three-digit code, check whether the ◑ button for time preselection has been pressed by mistake. To do this, press the ◑ button again.

For more details, see page 41, "Browsing in text pages".

### Page selection in the FASTEXT system

Different subject areas are marked by different colors on the text pages; these colors also appear on the remote control unit.

5 For information selection, you only need the colored FASTEXT buttons on the remote control unit.
Use the appropriate colored button to select the desired subject area while still in the overview page.
Select all following pages (wherever possible) by means of the color menu. This method enables you to call up a mass of information easily and quickly.

If you change from one subject to the next with the FASTEXT buttons, the following page always appears immediately on the screen unless you press several buttons in rapid succession during a lengthy search procedure.

If a text page appears without color menu, you must select a text page using the numeric buttons or call up the list of contents. For details, see steps 4 and 2 respectively.
To leave the FASTEXT system and to browse in text pages without a color menu, press the ≡▶ or ◀≡ button (see page 41, "Browsing in text pages").
To reenter FASTEXT mode, press the ≡i button.

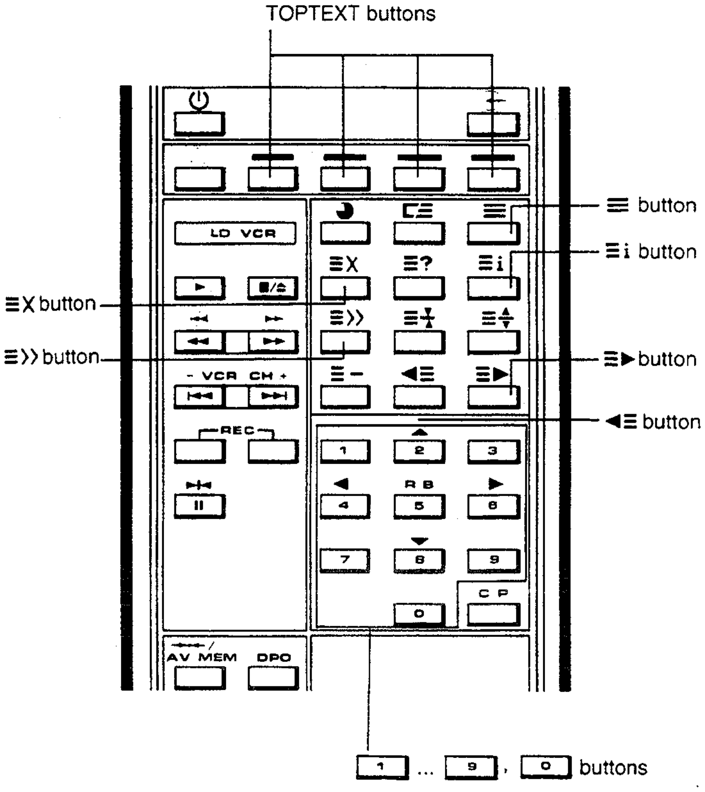
## TOPTEXT system

### Overview

The TOP system enables you to select text pages easily and quickly by means of menu prompting, using the colors in the bottom line of the menu (below the text page) for this purpose. These colors also appear on the remote control unit.
After the Projection TV has been turned on and switched immediately over to a text program of the TOPTEXT system, at first only the menu colors appear on the screen. The colored buttons are still inoperative.
As soon as the TOPTEXT system has been loaded (after 30 seconds at the latest), text will appear in the color menu. The colored buttons are now operative.
The colored buttons enable you (with no waiting time)

1. To select subject areas using the Blue button.
2. To select subjects using the Yellow button.
3. To browse forwards and backwards within individual text pages:
   Green button = P+ = forward.
   Red button = P- = backwards.

Fast page selection is provided by the TOP (Table Of Pages) Table. This table is automatically read into the digital text decoder of the Projection TV when a program with TOPTEXT system is selected. The Projection TV takes from this table all requisite details on text pages contained in the program, plus the beginning of subjects and subject areas.
As soon as a page has been selected, the Projection TV recognizes which is the next or the previously single page you can select, and which is the next subject or the next subject area you can select.



### Operation

**1 Subject areas.**
Use the Blue button to browse through the subject areas consecutively, e.g.

| | | | |
|---|---|---|---|
| P– | P+ | POLITICS | NEWS |
| | | | ↓ |
| P– | P+ | ECONOMICS | SPORTS |
| | | | ↓ |
| P– | P+ | 1ST PROGRAM | TV-PROGRAM |

Once you are within the subject area selected, you can continue directly with step 2 or 1.
If a particular subject area selected is not subdivided into individual subjects, the yellow fild will be empty and step 2 with the Yellow button cannot be performed, meaning that you go on directly to step 3.
The menu line displays the next selection option in each case, e.g.

| | | | |
|---|---|---|---|
| P– | P+ | ECONOMICS | SPORTS |
| | | ↓ | |
| P– | P+ | CULTURE | SPORTS |
| | | | ↓ |
| P– | P+ | 2ND PROGRAM | NEWS |

**2 Subjects.**
Use the Yellow button to browse through the subjects of the selected area, as shown below.

| | | | |
|---|---|---|---|
| P– | P+ | POLITICS | SPORTS |
| | | ↓ | |
| P– | P+ | ECONOMICS | SPORTS |
| | | ↓ | |
| P– | P+ | CULTURE | SPORTS |
| | | ↓ | |
| P– | P+ | POLITICS | SPORTS |
| | | ↓ | |

or

| | | | |
|---|---|---|---|
| P– | P+ | FOOTBALL | TV-PROGRAM |
| | | ↓ | |
| P– | P+ | HANDBALL | TV-PROGRAM |
| | | ↓ | |
| P– | P+ | TENNIS | TV-PROGRAM |
| | | ↓ | |
| P– | P+ | ATHLETICS | TV-PROGRAM |
| | | ↓ | |
| P– | P+ | FOOTBALL | TV-PROGRAM |

## TELETEXT FUNCTIONS

**3 Page selection.**
You can use the Green button to browse forward through the individual pages of a subject, and the Red button to browse through them backward, as shown below.

| | | | |
|---|---|---|---|
| P– | P+ | FOOTBALL | TV-PROGRAM |
| | ↓ | | |
| P– | P+ | FOOTBALL | TV-PROGRAM |
| | ↓ | | |
| P– | P+ | FOOTBALL | TV-PROGRAM |
| ↓ | | | |
| P– | P+ | FOOTBALL | TV-PROGRAM |

Note that it does not matter whether pages are assigned consecutively, e.g. 101, 102, 103, 104 ..., or whether there are gaps in between, e.g. 101, 106, 118, 122 ... The TOP system will always recognize which is the next page to be opened.
Starting from the selected page, the text decoder stores the next 9 pages for forward browsing, while for backward browsing it stores the 4 preceding pages.

**4 Conventional page selection.**
If a page is selected using the numeric buttons, there may be (depending on the standard involved) a waiting time until the page appears on the screen.
When the page appears on the screen, the menu line shows the next subject (yellow) and the next subject area (blue) you can select.
If there is no page in the program for the page number you have selected, the menu line will flash, and the red color field will be empty, e.g.:

| | | | |
|---|---|---|---|
| ☐ | P+ | FOOTBALL | SPORTS |

The selected page number is lit up in red.

**5 Multiple pages in the TOPTEXT system.**
See pages 41 and 42 for information on the automatic browsing function and on browsing in multiple pages in conventional text systems.
For the browsing function in multiple pages in the TOPTEXT system, the following functions are operative:
After the ≡›› and ≡x buttons have been pressed, the number of the currently stored single pages will appear in the TV picture instead of the header line.
With multiple pages up to 9 single pages, the complete header line will reappear as soon as the last single page has been stored.
With multiple pages of 10 and more single pages, the header line will reappear as soon as all memories have been filled.
After the header line has appeared an the ≡ button has been pressed, you can browse back and forth between the single pages using the ≡▶ and ◀≡ buttons.
If you press the ≡›› button, although no page is available for this page number for the TOPTEXT system to hold, the selected page number will flash briefly in red.

**6 Quitting multiple pages in the TOPTEXT system.**
Press the ≡i button, or enter a new page number.

## Browsing in text pages

The following functions are for text programs and text pages without color menu.

## Browsing in text pages

1 Press the ≡▶ button to browse forward, or press the ◀≡ button to browse backward.

The adjoining page number is available with no waiting time.
After you have selected a text page, the multipage memory will store a whole block of 14 consecutive pages.
For example, selection and display of page 401:
pages 402 - 407 will automatically be stored in memory;
browsing to 408 and display of this page:
pages 409 - 414 will automatically be stored in memory.
After that, you can browse back and forth between pages 401 - 414 with no waiting time.
If after you have changed from one text program to another you do not select a new page, the new program contents for the previously selected 14 page numbers will be automatically filed in the multipage memory. If, however, one of these page numbers does not have any program contents, the contents of the same page number of the previously selected text program will appear on the screen. This is indicated by the page counter running through continuously, so that no confusion of text programs can occur.

## Automatic browsing and halting of multiple pages

With multiple pages, several single pages are being transmitted one after the other under the same page number.
Multiple pages are often marked >>, >, 1/4 or 01/04, depending on the text system and program involved.
These multiple pages will be browsed through automatically at 20 to 30-second intervals, depending on the station concerned. The single page number and the the total number of pages are frequently indicated by codes such as 01/04.

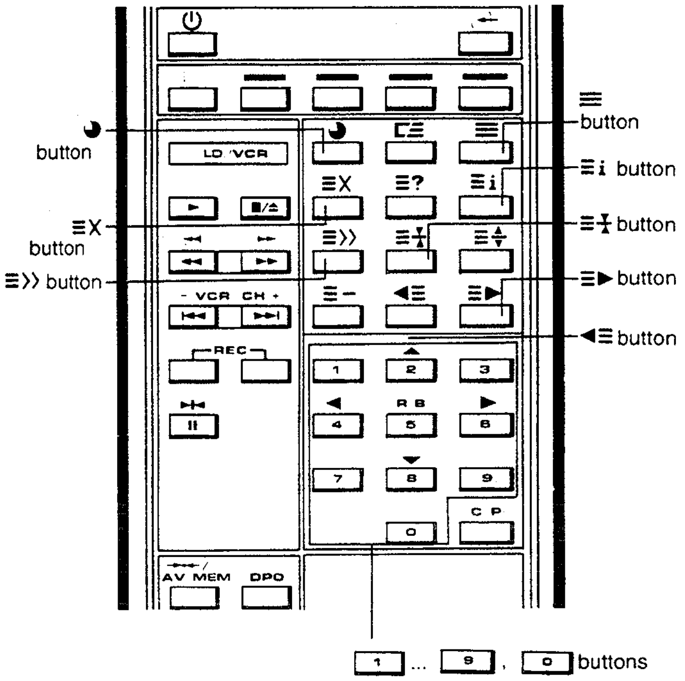
2 To halt at a single page, press the ≡‡ button as required. The header line now displays STOP instead of the page number. The halted page can be kept on the screen as long as you wish. To resume browsing, press the ≡‡ button once more. You can, however, also select another page number to quit the halted single page.

Single pages can also be called up selectively. For details, see "Entering a preselection page".

## Browsing in multiple pages without color menu

You can also browse through multiple pages independently of the automatic browsing intervals.

3 If the page number of a multiple page has been entered, press the ≡» button. The display of the selected page number on the left of the header line will change from ... to > ... One of the single pages will appear on the screen. The procedure for filling the memories with the remaining single pages can take up to 6.5 minutes, due to the standard involved.



4 While this procedure is being performed, you can watch TV. To do this, press the ≡X button. ≡X display will appear instead of the header.

5 As soon as the header line is again being superimposed onto the picture, press the ≡ button.

6 Now all single pages have been filed in the multipage memory, and you can browse back and forth between them using the ≡▶ and ◀≡ buttons.

If a multiple page consists of less than 14 single pages, the same contents will be assigned to single page memories.
If a multiple page contains only 5 single pages, for example, you can press the ≡ button (for browsing using the ≡▶ and ◀≡ buttons) as soon as the memory display on the screen shows 5.

If a multiple page contains more than 14 single pages, it is browsed through in the last memory which displays the number > ... of the selected page in the header line in yellow, at 20 to 30-second intervals as usual.

7 To quit the browsing mode, just enter a new page number.

In multiple pages of FASTEXT programs, no color menu is displayed.

## TELETEXT FUNCTIONS

### Entering a preselection page

Depending on the countries and text programs involved, the following preselection function options are available:

### Calling up a single multiple page

This function is only possible when the screen is displaying a multiple page, e.g. with >> and 01/04.

### Text at a preselected time

For a text page, such as alarm clock, you can preselect the time at which you want to see it.
This function is operative only in some text programs, and only for one page.

### Entry

1 Enter the page number desired.

2 Press the ◑ button.
Instead of the page number, you will now see * in the header.

3 Enter the desired single page number in four-digit form, e.g. 0003 or enter the desired time in four-digit form, e.g. 1715 or 0830.

4 If you want to watch TV until the selected page appears, press the ≡X button. ≡X display will appear in the picture. When the single page (or the time) is reached, the header line will appear on the picture, sometimes the whole text page as well.

5 Press the ≡ button to read the page.

6 Press the ◑ or ≡i button to quit this text function.

## Additional text functions

### 1 Mixing program contents

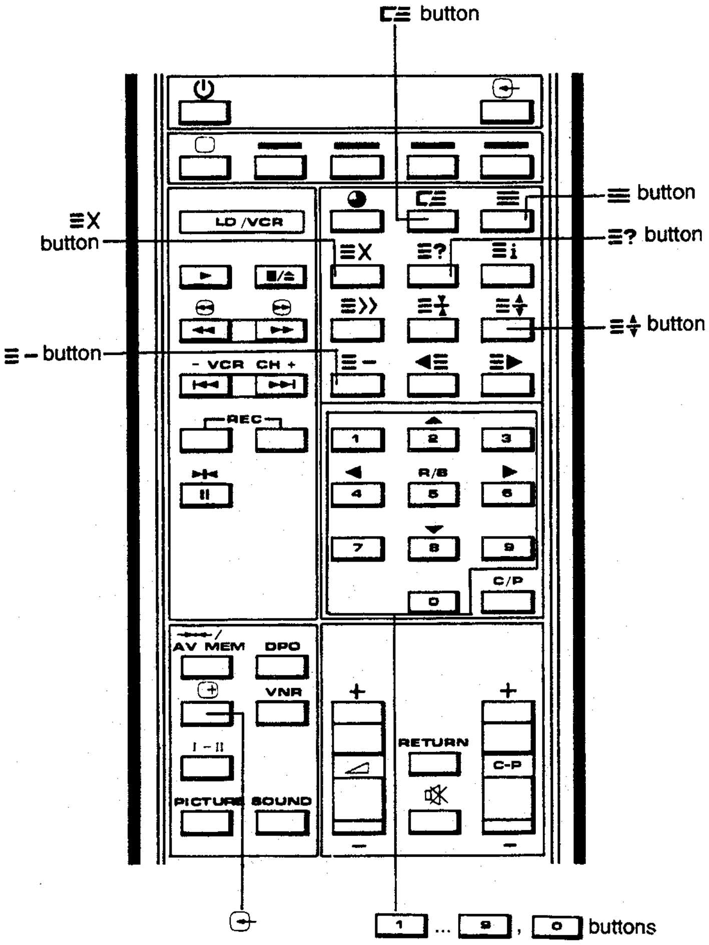
To mix the program contents, press the ≡ button, and press the C≡ button again to cancel this function.

### 2 Latest news

Latest news items are superimposed onto the picture on special pages. News you have read can be erased by pressing the ≡X button. ≡X display will appear in the picture. With the text news update, a new text will appear in the picture.
If you want to superimpose news again manually, press the ≡ button.

### 3 Subtitles

On some TV channels, subtitles are superimposed synchronously. Select the text page designated for the TV channel in question.



### 4 Retrieval of hidden text

Some text pages contain results of television university exercises, answers to quiz questions, or VPS times.
To call up hidden text, press the ≡? button once, to conceal it again, press the ≡? button once more.

### 5 Double character height

Repeatedly pressing the ≡⇕ button will cause the character height of the upper and lower half pages to be doubled alternately.
When the ≡– button is pressed, the complete page appears with standard character height.

### 6 Page selection in the television picture

In order to bridge the (sometimes lengthy) waiting times when searching for text pages, you can also perform every page selection while the television picture appears on the screen. To do this, press the ≡X button. ≡X display will appear in the television picture. This indicates that the Projection TV is still in text mode.
If you select a text page, only the page selection display will be shown at the top left of the screen at first. Only after reception of the page will the complete header line appear again.
In order to switch back to the text page, press the ≡ button in each case.

### 7 Time indication

Press the ⊕ button. Input indication will appear for a few seconds on the screen. Press it again while the input indication is on display to indicate present time in the corner of the screen.
Time indication disappears in several minutes.

***NOTES:***

- *The current time is only visible when the selected TV program is broadcasting Teletext.*
- *TELETEXT functions do not operate immediately after turning on the power.*
  *Several seconds are required for preparation.*

# TROUBLESHOOTING

Please check the following chart and try the suggested solutions before consulting a PIONEER authorized service center.
Often you can fix the problem by making a simple adjustment on the Projection TV. Faulty connections may be to blame, or it may be another piece of equipment that is causing the trouble.

| SYMPTOM | POSSIBLE CAUSE AND SUGGESTED SOLUTION |
|---|---|
| **NO PICTURE** | AC power cord is not plugged into the wall socket.<br>**Plug in the AC power cord.**<br>Power switch is off.<br>**Turn on the power switch on the Projection TV, or turn on using the remote control unit.**<br>Selected video signal source is not connected to input jacks, or source unit (VCR, etc.) is not turned on or is not providing a signal.<br>**Check connections and source unit operation.** |
| **COLOR IS WASHED OUT** | Color value is too low.<br>**Use PICTURE button and ADJUST buttons to increase ⊛ (COLOR) value.**<br>Brightness value is too high.<br>**Use PICTURE button and ADJUST buttons to reduce ☼ (BRIGHT) value.** |
| **COLOR TINT IS WRONG** | Tint value is too high or low.<br>**Use PICTURE button and ADJUST buttons to adjust ◐ (TINT) value.** |
| **STATIC IN TV PICTURE** | Interference from motor vehicles, neon signs, etc.<br>**Try changing the height or direction of the TV antenna. Move the antenna away from the source of interference.** |
| **GHOSTING ON SCREEN** | This “multipath” distortion is caused when the TV signal is received along two paths, directly and after being reflected from tall buildings, mountains or other obstacles. Strong winds may have changed the direction of the TV antenna.<br>**Try changing the height or direction of the antenna. An antenna with better directional characteristics may be required.** |
| **COLORED STRIPES ON SCREEN** | Interference from other radio or TV signals.<br>**Try changing the height or direction of the antenna. Try changing to a coaxial antenna cable. Coaxial cable is shielded to minimize pickup of interfering signals.** |
| **COLORED EDGES ON IMAGES** | Color convergence needs adjustment.<br>**Tune in a channel, select CONVERGENCE from among the menu items and adjust using the convergence controls on the remote control unit. (See page 27 for details.)** |
| **UNCLEAR PICTURE** | Connections are loose or cables are damaged.<br>**Check connections and try using new cables.**<br>Antenna may be damaged.<br>**Check antenna.** |
| **POOR PICTURE OR COLOR QUALITY** | Interference from a nearby loudspeaker or other source of magnetism.<br>**Move source of interference away from the Projection TV.** |
| **NO SOUND** | Rear panel SPEAKER SELECTOR is set to EXT, but external loudspeakers are not connected.<br>**Set selector to INT.** |
| **NO ON-SCREEN CHANNEL OR OTHER DISPLAY** | Strong light striking the remote control sensor may cause the internal microcomputer to malfunction.<br>**Change the position of the Projection TV or change the lighting so that the sensor is not exposed to strong light sources.** |

- Abnormal functioning of this Projection TV may be caused by lightning, static electricity, or other external interference. To restore normal operation, turn the power off and then on again, or unplug the AC power cord and then plug it in again.
- With some VCRs, when the VCR is not in play mode, the screen sometimes fluctuates. This is not a malfunction.

# CARE OF YOUR PROJECTION TV

## DO NOT:

- Do not use strong cleansers, solvents, polishes or chemically treated cloths to clean the screen or cabinet.
- Do not touch or scratch the screen.
- Do not fasten or place rubber or vinyl items on the Projection TV.
- Do not use tape on the Projection TV.
- Do not put any object on the Projection TV.

## DO:

- Use a soft cloth to dust the screen and cabinet.
- If necessary, unplug the Projection TV and wipe with a soft cloth moistened with warm water (and mild soap if dirt has built up.) Dry with a soft, dry cloth.
- Treat the screen with care to avoid scratches or damage.
- Ask your local dealer to clean the interior of the Projection TV if maximum picture brightness decreases. This may be caused by dust buildup inside.

# TV CHANNEL SELECTION

**Table A-1/2**

| Channel designation | Entry number | Transmission frequency (MHz) | Standard TV system | Remarks |
|---|---|---|---|---|
|  | 1 |  |  |  |
| 2 | 2 | 48.25 | B/G |  |
| 3 | 3 | 55.25 |  |  |
| 4 | 4 | 62.25 |  |  |
| 5 | 5 | 175.25 |  |  |
| 6 | 6 | 182.25 |  |  |
| 7 | 7 | 189.25 |  |  |
| 8 | 8 | 196.25 |  |  |
| 9 | 9 | 202.25 |  |  |
| 10 | 10 | 210.25 |  |  |
| 11 | 11 | 217.25 |  |  |
| 12 | 12 | 224.25 |  | Italy |
| A | 13 | 53.75 |  |  |
| B | 14 | 62.25 |  |  |
| C | 15 | 82.25 |  |  |
| D | 16 | 175.25 |  |  |
| E | 17 | 183.25 |  |  |
| F | 18 | 192.25 |  | ↓ |
| G | 19 | 201.25 |  |  |
| H | 20 | 210.25 |  |  |
| 21 | 21 | 471.25 |  |  |
| 22 | 22 | 479.25 |  |  |
| 23 | 23 | 487.25 |  |  |
| 24 | 24 | 495.25 |  |  |
| 25 | 25 | 503.25 |  |  |
| 26 | 26 | 511.25 |  |  |
| 27 | 27 | 519.25 |  |  |
| 28 | 28 | 527.25 |  |  |
| 29 | 29 | 535.25 |  |  |
| 30 | 30 | 543.25 |  |  |
| 31 | 31 | 551.25 |  |  |
| 32 | 32 | 559.25 |  |  |
| 33 | 33 | 567.25 |  |  |
| 34 | 34 | 575.25 |  |  |
| 35 | 35 | 583.25 |  |  |
| 36 | 36 | 591.25 |  |  |
| 37 | 37 | 599.25 |  |  |
| 38 | 38 | 607.25 |  |  |
| 39 | 39 | 615.25 |  |  |
| 40 | 40 | 623.25 |  |  |
| 41 | 41 | 631.25 |  |  |
| 42 | 42 | 639.25 |  |  |
| 43 | 43 | 647.25 |  |  |
| 44 | 44 | 655.25 |  |  |
| 45 | 45 | 663.25 |  |  |
| 46 | 46 | 671.25 |  |  |
| 47 | 47 | 679.25 |  |  |
| 48 | 48 | 687.25 |  |  |
| 49 | 49 | 695.25 | ↓ |  |
| 50 | 50 | 703.25 |  |  |

**Table A-2/2**

| Channel designation | Entry number | Transmission frequency (MHz) | Standard TV system | Remarks |
|---|---|---|---|---|
| 51 | 51 | 711.25 | B/G | Italy |
| 52 | 52 | 719.25 |  |  |
| 53 | 53 | 727.25 |  |  |
| 54 | 54 | 735.25 |  |  |
| 55 | 55 | 743.25 |  |  |
| 56 | 56 | 751.25 |  |  |
| 57 | 57 | 759.25 |  |  |
| 58 | 58 | 767.25 |  |  |
| 59 | 59 | 775.25 |  |  |
| 60 | 60 | 783.25 |  |  |
| 61 | 61 | 791.25 |  |  |
| 62 | 62 | 799.25 |  |  |
| 63 | 63 | 807.25 |  |  |
| 64 | 64 | 815.25 |  |  |
| 65 | 65 | 823.25 |  |  |
| 66 | 66 | 831.25 |  |  |
| 67 | 67 | 839.25 |  |  |
| 68 | 68 | 847.25 |  |  |
| 69 | 69 | 855.25 |  |  |
| 70 | 70 | 863.25 |  |  |
| 71 | 71 | 47.25 |  |  |
| X | 72 | 69.25 |  |  |
| Y | 73 | 76.25 |  |  |
| Z | 74 | 83.25 |  |  |
| Z+1 | 75 | 90.25 |  |  |
| Z+2 | 76 | 97.25 |  |  |
| U1 | 77 | 226.25 |  | Belgium |
| U2 | 78 | 234.25 |  |  |
| U3 | 79 | 242.25 |  |  |
| U4 | 80 | 250.25 |  |  |
| U5 | 81 | 258.25 |  |  |
| M1/7 | 82 | 104.25 |  |  |
| M2/7 | 83 | 111.25 |  |  |
| M3/7 | 84 | 118.25 |  |  |
| M4/7 | 85 | 125.25 |  |  |
| M5/7 | 86 | 132.25 |  |  |
| M6/7 | 87 | 139.25 |  |  |
| M7/7 | 88 | 146/25 |  |  |
| M8/7 | 89 | 153.25 |  |  |
| M9/7 | 90 | 160.25 |  |  |
| M10/7 | 91 | 167.25 |  |  |
| M1/8 | 92 | 110.25 |  |  |
| M2/8 | 93 | 118.25 |  |  |
| M3/8 | 94 | 126.25 |  |  |
| M4/8 | 95 | 134.25 |  |  |
| M5/8 | 96 | 142.25 |  |  |
| M6/8 | 97 | 150.25 |  |  |
| M7/8 | 98 | 158.25 |  |  |
| M8/8 | 99 | 166.25 | ↓ | ↓ |

# TV CHANNEL SELECTION

### Table B-1/2

| Channel designation | Entry number | Transmission frequency (MHz) | Standard TV system | Remarks |
|---|---|---|---|---|
| S1 | 1 | 105.25 | B/G | |
| S2 | 2 | 112.25 | | |
| S3 | 3 | 119.25 | | |
| S4 | 4 | 126.25 | | |
| S5 | 5 | 133.25 | | |
| S6 | 6 | 140.25 | | |
| S7 | 7 | 147.25 | | |
| S8 | 8 | 154.25 | | |
| S9 | 9 | 161.25 | | |
| S10 | 10 | 168.25 | | |
| S11 | 11 | 231.25 | | |
| S12 | 12 | 238.25 | | |
| S13 | 13 | 245.25 | | |
| S14 | 14 | 252.25 | | |
| S15 | 15 | 259.25 | | |
| S16 | 16 | 266.25 | | |
| S17 | 17 | 273.25 | | |
| S18 | 18 | 280.25 | | |
| S19 | 19 | 287.25 | | |
| S20 | 20 | 294.25 | | |
| S21 | 21 | 303.25 | | |
| S22 | 22 | 311.25 | | |
| S23 | 23 | 319.25 | | |
| S24 | 24 | 327.25 | | |
| S25 | 25 | 335.25 | | |
| S26 | 26 | 343.25 | | |
| S27 | 27 | 351.25 | | |
| S28 | 28 | 359.25 | | |
| S29 | 29 | 367.25 | | |
| S30 | 30 | 375.25 | | |
| S31 | 31 | 383.25 | | |
| S32 | 32 | 391.25 | | |
| S33 | 33 | 399.25 | | |
| S34 | 34 | 407.25 | | |
| S35 | 35 | 415.25 | | |
| S36 | 36 | 423.25 | | |
| S37 | 37 | 431.25 | | |
| S38 | 38 | 439.25 | | |
| S39 | 39 | 447.25 | | |
| S40 | 40 | 455.25 | | |
| S41 | 41 | 463.25 | | |
| S22H | 42 | 315.25 | | |
| S24H | 43 | 339.25 | | |
| S26H | 44 | 363.25 | | |
| S28H | 45 | 387.25 | | |
| S30H | 46 | 411.25 | | |
| S32H | 47 | 435.25 | | |
| S34H | 48 | 459.25 | | |
| | 49 | 49.25 | | Belgium |
| | 50 | 56.25 | | |

### Table B-2/2

| Channel designation | Entry number | Transmission frequency (MHz) | Standard TV system | Remarks |
|---|---|---|---|---|
| | 51 | 63.25 | B/G | Belgium |
| | 52 | 174.25 | | Belgium |
| | 53 | 190.25 | | |
| | 54 | | | |
| | 55 | | | |
| A | 56 | 45.75 | I | IRELAND |
| B | 57 | 53.75 | | |
| C | 58 | 61.75 | | |
| D | 59 | 175.25 | | |
| E | 60 | 183.25 | | |
| F | 61 | 191.25 | | |
| G | 62 | 199.25 | | |
| H | 63 | 207.25 | | |
| J | 64 | 215.25 | | |
| FA | 65 | 47.75 | L' | FRANCE |
| FB | 66 | 55.75 | L' | |
| FC1 | 67 | 60.50 | L' | |
| FC | 68 | 63.75 | L' | |
| F1 | 69 | 176.0 | L | |
| F2 | 70 | 184.0 | | |
| F3 | 71 | 192.0 | | |
| F4 | 72 | 200.0 | | |
| F5 | 73 | 208.0 | | |
| F6 | 74 | 216.0 | | |
| K4 | 75 | 175.25 | | |
| K5 | 76 | 183.25 | | |
| K6 | 77 | 191.25 | | |
| K7 | 78 | 199.25 | | |
| K8 | 79 | 207.25 | | |
| K9 | 80 | 215.25 | | |
| B | 81 | 116.75 | | |
| C | 82 | 128.75 | | |
| D | 83 | 140.75 | | |
| E | 84 | 152.75 | | |
| F | 85 | 164.75 | | |
| G | 86 | 176.75 | | |
| H | 87 | 188.75 | | |
| I | 88 | 200.75 | | |
| J | 89 | 212.75 | | |
| K | 90 | 224.75 | | |
| L | 91 | 236.75 | | |
| M | 92 | 248.75 | | |
| N | 93 | 260.75 | | |
| O | 94 | 272.75 | | |
| P | 95 | 284.75 | | |
| Q | 96 | 296.75 | | |
| | 97 | | | |
| | 98 | | | |
| | 99 | | | |

### Table C-1/2

| Channel designation | Entry number | Transmission frequency (MHz) | Standard TV system | Remarks |
|---|---|---|---|---|
| 1 | 1 | 49.75 | D/K | China |
| 2 | 2 | 57.75 | | |
| 3 | 3 | 65.75 | | |
| 4 | 4 | 77.25 | | |
| 5 | 5 | 85.25 | | |
| 6 | 6 | 168.75 | | |
| 7 | 7 | 176.25 | | |
| 8 | 8 | 184.25 | | |
| 9 | 9 | 192.25 | | |
| 10 | 10 | 200.25 | | |
| 11 | 11 | 208.25 | | |
| 12 | 12 | 216.25 | | |
| 13 | 13 | 471.25 | | |
| 14 | 14 | 479.25 | | |
| 15 | 15 | 487.25 | | |
| 16 | 16 | 493.25 | | |
| 17 | 17 | 503.25 | | |
| 18 | 18 | 511.25 | | |
| 19 | 19 | 519.25 | | |
| 20 | 20 | 527.25 | | |
| 21 | 21 | 535.25 | | |
| 22 | 22 | 543.25 | | |
| 23 | 23 | 551.25 | | |
| 24 | 24 | 559.25 | | |
| 25 | 25 | 607.25 | | |
| 26 | 26 | 615.25 | | |
| 27 | 27 | 623.25 | | |
| 28 | 28 | 631.25 | | |
| 29 | 29 | 639.25 | | |
| 30 | 30 | 647.25 | | |
| 31 | 31 | 655.25 | | |
| 32 | 32 | 663.25 | | |
| 33 | 33 | 671.25 | | |
| 34 | 34 | 679.25 | | |
| 35 | 35 | 687.25 | | |
| 36 | 36 | 695.25 | | |
| 37 | 37 | 703.25 | | |
| 38 | 38 | 711.25 | | |
| 39 | 39 | 719.25 | | |
| 40 | 40 | 727.25 | | |
| 41 | 41 | 735.25 | | |
| 42 | 42 | 743.25 | | |
| 43 | 43 | 751.25 | | |
| 44 | 44 | 759.25 | | |
| 45 | 45 | 767.25 | | |
| 46 | 46 | 775.25 | | |
| 47 | 47 | 783.25 | | |
| 48 | 48 | 791.25 | | |
| 49 | 49 | 799.25 | | |
| 50 | 50 | 807.25 | | |

### Table C-2/2

| Channel designation | Entry number | Transmission frequency (MHz) | Standard TV system | Remarks |
|---|---|---|---|---|
| 51 | 51 | 815.25 | D/K | China |
| 52 | 52 | 823.25 | | |
| 53 | 53 | 831.25 | | |
| 54 | 54 | 839.25 | | |
| 55 | 55 | 847.25 | | |
| 56 | 56 | 855.25 | | |
| 57 | 57 | 863.25 | | |
| R2 | 58 | 59.25 | | OIRT |
| R5 | 59 | 93.25 | | |
| R6 | 60 | 175.25 | | |
| R7 | 61 | 183.25 | | |
| R8 | 62 | 191.25 | | |
| R9 | 63 | 199.25 | | |
| R10 | 64 | 207.25 | | |
| R11 | 65 | 215.25 | | |
| R12 | 66 | 223.25 | | |
| | 67 | | | |
| | 68 | | | |
| | 69 | | | |
| 0 | 70 | 46.25 | B/G | Australia |
| 1 | 71 | 57.25 | | |
| 2 | 72 | 64.25 | | |
| 3 | 73 | 86.25 | | |
| 4 | 74 | 95.25 | | |
| 5 | 75 | 102.25 | | |
| 5A | 76 | 138.25 | | |
| 6 | 77 | 175.25 | | |
| 7 | 78 | 182.25 | | |
| 8 | 79 | 189.25 | | |
| 9 | 80 | 196.25 | | |
| 10 | 81 | 209.25 | | |
| 11 | 82 | 216.25 | | |
| 1 | 83 | 45.25 | | New Zealand |
| 2 | 84 | 55.25 | | |
| 3 | 85 | 62.25 | | |
| 8 | 86 | 203.25 | | |
| 9 | 87 | 210.25 | | |
| 10 | 88 | 217.25 | | |
| 11 | 89 | 224.25 | | |
| | 90 | | | |
| | 91 | | | |
| | 92 | | | |
| | 93 | | | |
| | 94 | | | |
| | 95 | | | |
| | 96 | | | |
| | 97 | | | |
| | 98 | | | |
| | 99 | | | |

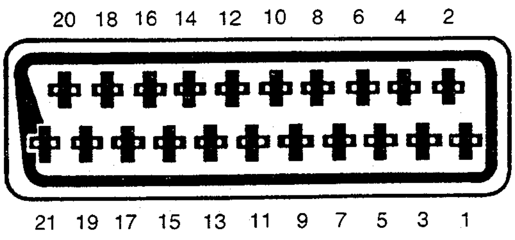
# SPECIFICATIONS

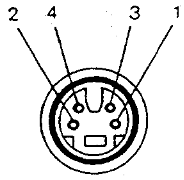
## DISPLAY SECTION

| | |
|---|---|
| Reception system | PAL, SECAM, NTSC, NTSC 4.43 |
| Screen size | 50" |
| CRT | 7" CRT x3 |
| Actual viewing angle | Horizontal H = 140°<br>Vertical V = 50° |
| Input terminals | 2 Scarts, 2 AV Cinch, 2 Y/C plug |
| Output terminals | Video output, audio output (Recording) |
| Input signal | Video signal: 1.0 Vp-p ±3 dB<br>TV coaxial 75 ohms UNBAL |
| Input impedance | Video input: 75 ohms ±10%<br>Audio input: 10 kohms or more |
| Input signal polarity | Synchronized negative |
| Output terminal signal ratings: | |
| Output terminals | Video signal: 1 Vp-p (75 ohms load)<br>Audio signal: 500 mV rms (100% modulation) |
| Output impedance | Video output: 75 ohms ± 10%<br>Audio output: Less than 1 kohms |

## TUNER SECTION

| | |
|---|---|
| Circuit type | Video signal detection:<br>LLD detection<br>PLL Digital Synthesizer system<br>Audio multiplex: CCIR system<br>NICAM, MTS |
| Reception channels | VHF; CH2 – CH12, UHF; CH21 – CH69<br>CATV; CH E2 - CH S20,<br>Italy; CH A - CH H2<br>New Zealand; CH1 - CH11<br>OIRT; R1 - R12<br>China; CH1 - CH57<br>Australia; CH0 - CH11<br>New France; FB - F6<br>US; CH2 - CH69<br>US CATV STD; CH2 - W+29<br>US CATV; HRC CH1 - A-1 |
| Antenna terminal | ANTENNA terminal,<br>TV coaxial 75 ohms UNBAL |





## AMPLIFIER SECTION

| | |
|---|---|
| Tone control | BASS, TREBLE |
| Built-in speaker system | 16 cm (6-1/2 in) mid-low range x2<br>6 cm (2-3/8 in) high range x2 |
| External speaker impedance | 8 -16 ohms |

## ELECTRICAL SECTION, MISCELLANEOUS

| | |
|---|---|
| Power requirements | AC110V/120-127V/220V/240V (switchable).<br>50/60 Hz |
| Power consumption | 300 W |
| External dimensions | 1145 (W) × 675 (D) × 1326 (H) mm |
| Weight of main unit | 110 kg |

## WIRELESS REMOTE CONTROL UNIT

Operation System: Infrared remote control system

Power source: Two IEC R6 (UM-3, "AA") 1.5 V dry cell batteries

ACCESSORIES

| | |
|---|---|
| Operating instructions | 1 |
| Remote control unit | 1 |
| IEC R6 (UM-3, "AA" size) dry cell batteries | 2 |
| Caution card | 1 |
| Warranty card | 1 |
| Circuit diagram | 4 |
| Power Cord | 2 |

*NOTE:*
*Specifications and design subject to possible modifications without notice due to improvements.*

## Assignment of connections for EURO-AV sockets

| | EURO-AV1 | | EURO-AV2 |
|---|---|---|---|
| 1 | Audio output B | 1 | Audio output B |
| 2 | Audio input B | 2 | Audio input B |
| 3 | Audio output A | 3 | Audio output A |
| 4 | Audio ground | 4 | Audio ground |
| 5 | Blue ground | 5 | — |
| 6 | Audio input A | 6 | Audio input A |
| 7 | Blue | 7 | — |
| 8 | Switching voltage | 8 | — |
| 9 | Green ground | 9 | — |
| 10 | — | 10 | — |
| 11 | Green | 11 | — |
| 12 | — | 12 | — |
| 13 | Red ground | 13 | — |
| 14 | — | 14 | — |
| 15 | Red or chroma signal with S-Video | 15 | Chroma signal with S-Video |
| 16 | Blanking signal | 16 | — |
| 17 | Video output ground | 17 | Video output ground |
| 18 | Video input ground | 18 | Video input ground |
| 19 | Video output | 19 | Video output |
| 20 | Video input or luminance with S-Video | 20 | Video input or luminance with S-Video |
| 21 | Screening or ground | 21 | Screening or ground |

## Assignment of connections for S-VIDEO socket

1 Ground
2 Ground
3 Luminance
4 Chroma signal

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